

GLOBAL STRATEGIES FOR COVID-19 RESPONSE:
Guidelines and learnings for replication by Indian states
(21 April 2020)

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With Indian states developing their own guidelines and strategies for COVID-19 response, this document details the various measures adopted by other countries. Based on a review of digital news media and personal interviews of officials in country governments, this note highlights the policy responses of Australia, Canada, China, France, Hong Kong, Japan, Singapore, South Korea, Taiwan, USA, Vietnam and other countries. [Appendix 1](#) summarizes [WHO guidelines](#) for community transmission. Other technical guidelines for national authorities can be accessed [here](#).

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Australia

First recorded case date: [25 January 2020](#)

Number of confirmed cases: [6,645](#) (71 deaths as on 21 April 2020)

Strategies Employed

1. **Dissemination of clear information to the public to prevent misinformation:** Australia handled this by publishing timely [fact sheets](#), [alerts](#), [updates and education](#) material for the public and carrying out a communication campaign, using [direct text messages](#).
2. **Strategic emergency response plan:** Australia published a detailed [plan](#) outlining:
 - a. Three stages of the government's action plan – immediate, targeted action, and shutdown. The plan also set accountability within the government
 - b. Clear guidelines on what citizens can expect, how they can help the government's response and where they can find official information
3. **Healthcare capacity:** Australia adopted the following measures
 - a. Brought in retired nurses/paramedics who have worked in ICUs, set-up specific clinics as COVID-19 centres, prioritised medical resources for ICUs and considered the [cancellation of elective surgeries](#)
 - b. Added 269 and 188 new [hospital beds](#) in Victoria and South Australia, respectively. Doubled ICU ventilators [capacity](#) and added 31 new respiratory clinics in the next week
 - c. Launched [telehealth](#) (including mental health, allied health and general health) for the entire population by 30 March
4. **Testing capacity and the production of masks:** Australia uses '[point of care](#)' test kits which allows Doctors to test for the virus in 15 minutes. It is also set to launch [1,60,000](#) new test kits and 30 million masks.
5. **Economic stimulus package:** The West Australian State Government introduced a \$607 million [stimulus package](#) to households, pensioners and small businesses. This included suspending electricity, water, motor vehicle charges, emergency services levy and public transport fares. It also allowed small and medium businesses to defer tax payment until July 2020. [Other economic measures](#) included cutting interest rates to 0.25%, deploying cheap credit to banks and dispersing a \$15 billion lending package to businesses.
6. **Measures for the elderly:** Local Australian stores have dedicated shopping hours for the [elderly](#).

Canada

First recorded case date: [25 January 2020](#)

Number of confirmed cases: [36,831](#) (1690 deaths as on 21 April 2020)

Strategies Employed

1. **Effective communication and public education:** Canada's government website ([Canada.ca/coronavirus](#)) includes [downloadable information](#) on the novel coronavirus, how to be prepared and how to limit the spread of the virus. The government also launched a helpline that operates from 7:00 a.m. to midnight (EST) seven days a week. Additionally, Canada's Chief Public Health Officer and federal cabinet ministers conduct regular briefings to circulate information widely.
2. **Public health guidance:** The Canadian government issued guidelines on [infection prevention and control](#), [surveillance](#) and reducing spread in [community settings](#) such as [schools](#), [workplaces](#) and [mass gatherings](#).
3. **Comprehensive coordinated response:** Canada's response in collaboration with provinces included i) Activating its [health portfolio operations centre](#) and triggering the [federal/provincial/territorial public health response plan for the biological events](#), to ensure essential supplies and medicines do not fall short. It also leveraged its [national emergency strategic stockpile](#) to ensure critical resources can be deployed to provinces and territories if needed ii) Investing C\$50 million towards the purchase of personal protective equipment and other necessary medical supplies.
4. **Contribution to the international response:** Canada is collaborating with international organizations like WHO (\$50 million in international assistance). It is also working with **international health regulators**, including the European Medicines Agency and the United States Food and Drug Administration, to support and coordinate rapid regulatory responses for potential vaccines and other medical countermeasures.
5. **Economic relief package:** The Canadian government announced an [income replacement fund](#) to provide C\$2,000 per month to individuals who have lost income due to the coronavirus. It announced up to [C\\$27 billion](#) in direct support to Canadian workers and businesses and C\$55 billion to meet liquidity needs of Canadian businesses and households through tax deferrals. Further, a C\$305 million package to [help indigenous people](#) during the pandemic and a [C\\$100 million package](#) for urgent food banks and urgent supplies was announced.
6. **Smooth operation of government services:** In Canada, the [government Operations Centre](#) increased its level of activity to coordinate federal actions, including to potentially reallocate human resources across the government to ensure delivery of key functions.
7. **Imposition of travel restrictions:** The Canadian government will impose [restrictions](#) on intercity passenger train and domestic flight travel on people displaying symptoms of COVID-19.

8. **Distribution of medical equipment:** The Canadian government has collaborated with [Amazon](#) for the distribution of face shields, masks, gloves, ventilators, gowns and test kits.

China

First recorded case date: [17 November 2019](#)

Lockdown end date: March 23 (Hubei), April 4 (Wuhan)

Number of confirmed cases: [82,758](#) (4,632 deaths as on 21 April 2020)

Strategies Employed

1. **Suppression strategy:** Lockdown enforced.
2. **Swift action:** China ensured speed and accuracy in the [identification](#) and detection of the virus.
3. **Accessibility of data:** China released [public data](#) and undertook risk management to curb the spread of positive cases. The country also employed [big data](#) and infotech for phase-wise reopening after lockdowns.
4. **Strategic resource allocation:** China evaluated [medical resources](#) and response systems to best fight the virus.
5. **Implementation of preventive measures:** [China](#) provided communities, schools, businesses, government offices and homes with the resources to undertake and practice precautionary actions such as hand [hygiene](#) and social distancing. They also used [home delivery](#) to enable citizens to be indoors.
6. **Effective communication:** The Chinese government kept the [public well informed](#) about the developments of and necessary actions against the virus.
7. **Coordinated national and sub-national level responses:** The government [instituted](#) various levels of response, from partial to comprehensive, in accordance with the law across three stages
 - Stage 1: Prevent import and export of the disease
 - Stage 2: Reduce intensity and slow down increase
 - Stage 3: Reduce clusters of cases through epidemic control while balancing economic and social development to restore normal operations in a phase-wise manner
8. **Deployment of containment strategies:** China's severe containment strategy of Hubei [reduced transmissions to other provinces](#) and without it, cases would have been [64.81% higher](#) across 347 Chinese cities.

Easing the Lockdown

[Scientists' caveat for relaxing lockdown](#), based on Chinese evidence is **rapid testing and isolation**. This includes testing all those who are symptomatic and following up and isolating their contacts, in order to stamp out any further flare-ups of infection. There however continues to be a legitimate fear of a second outbreak because of [asymptomatic cases](#) and imported cases. The following are strategies that China employed to ease lockdown restrictions:

- **Phased easing and localised lockdowns:** Coastal provinces have been [deregulated](#) first while provinces near Wuhan and other hotspots continue to face restrictions.

- **Addressing rising imported cases:** International travel continues to be [restricted](#) and many returning residents are quarantined for 14 days (for example in Beijing).
- **Continuous monitoring:** Apps like [Alipay](#) and others are used to issue QR codes to citizens to indicate their COVID-19 status. This is updated with temperature checks that take place at the entrance of most establishments, which does come at a [privacy and surveillance cost](#).
- **Closure of educational institutions:** Chinese institutions, such as universities, schools and child-care centres, pending “a scientific assessment of the epidemic control situation” remain [closed](#).
- **Arrangements for migrants:** In Hubei, the failure to account for [migrants](#) led to large scale clashes as they rushed to return to home cities post lockdown easing. To avoid such a situation, countries can take measures for migrants into account.
- **Evaluation of trade-offs:** The Chinese government took into account [trade-offs between the health of those under lockdown and the rest of the country](#); for instance, multiple voices on how those under lockdown in Hubei may have been a higher health risk than those outside, because of the severity of lockdown.
- **Reopening of establishments with restrictions:** There are [caps](#) on how many people can enter an establishment. There is continued observance of social distancing and use of sanitisers. Restaurants don’t operate at full capacity and tourist areas require advance reservations to limit the number of visitors.
- **Reintroduction of restrictions as necessary:** The Chinese government was quick to reintroduce [restrictions](#) when numbers of positive cases increased. For example, public attractions like museums and cinemas in cities such as Shanghai which had initially been de-restricted are now closed again.
- **Gradual restarting of production and other services:** [95% of companies outside Hubei resumed](#) work, according to the Ministry of Information and Technology, but in a coordinated manner with restrictions on travel and mobility. Local officials have also been ordered to [restart production](#) in an “active and orderly” fashion and to “work hard to minimize the losses caused by the epidemic.”
- **Institutionalising economic measures:** The [Central bank](#) and [State councils](#) have reduced restrictions on lending and made available 1 trillion yuan (US\$140 billion) to small lenders. China’s State Council has authorised new bonds to fund infrastructure, additional subsidies and tax breaks for the car industry, and cheap loans for small businesses.
- **Deployment of social protection measures:** The Chinese central government will double the temporary monthly [allowance](#) for low-income families for the March-June period to counter price increases caused by the crisis.

France

First recorded case date : [24th January 2020](#)

Number of confirmed cases: [155,383](#) (20,265 deaths as on 21 April 2020)

Strategies Employed

1. **Suppression strategy:** In France, the [lockdown](#) has been extended till 15 April. The government is considering the possibility of a [phased lifting of lockdown](#) region-by-region and by age cohorts. French citizens have been [contained at home](#) and the government has ensured availability of basic services and supplies. The government mandated citizens to carry a compulsory form to declare their trips.
2. **Use of army forces for logistics:** The French [army forces](#) help in the transfer of infected patients from congested hospitals to others in critical regions, enforce the protocols, ensure surveillance of citizens, and assist in the opening of temporary army hospitals in critical regions.
3. **Use of speed trains, planes and warships for logistics:** France uses [medicalised trains](#) and planes to transport infected citizens across the country.
4. **Accommodation for non-infected homeless people:** The French government invested €50 millions with 2000 reserved [hotels' beds](#).
5. **Economic support package:** In France, a €45 billion [aid package](#) for small businesses and other hard-hit sectors of the economy has been set up.
6. **Regular interaction with top scientists and researchers:** France regularly does this for developing [solutions](#) to the virus. France also increased its national research and development funds to around €5billion.
7. **Establishment of an economy task force:** A [special task force](#) has been set up in France to ensure continuity of activities in the situation of containment and develop support systems to businesses.
8. **Availability of masks:** In France, the government has taken over [management of national](#) production and distribution of masks and face shields until 31 May 2020. It is also responsible for managing stocks and prioritising supply for healthcare workers in areas where the virus spreads fast, maximising production and optimising logistics.
9. **Business continuity planning:** The French government has been [planning for continuity of critical government functions](#) and production of essential goods and services, with emphasis on the sector of transportation.
10. **Special support system for healthcare workers:** France has set up [day-care for children](#) in requisitioned public school facilities.
11. **Closure of schools and universities:** Teachers in France have developed [virtual learning material](#) for the continuity of education programmes.
12. **Platform for volunteers:** A [volunteer](#) platform has been created in France to help in distribution of essential goods and maintain communication channels with isolated and fragile people for mental health.
13. **Self-check platform for citizens:** As is done in [France](#).

14. **Control of sanitiser prices:** The [French government](#) is regulating this until 31 May 2020.
15. **Safeguarding of domestic violence victims:** There has been a 30% surge in [domestic violence](#) in France, in response to which the government will provide victims hotel rooms and counselling support.
16. **Unemployed encouraged to work in farms:** The French government appealed to workers who have been temporarily laid off to help [farmers](#) with seasonal harvests.

Hong Kong

First recorded case date: [23 January 2020](#)

Number of confirmed cases: [1026](#) (4 deaths as on 21 April 2020)

Strategies Employed

1. **Swift action:** The government was quick to respond in terms of lockdowns, closures, travel bans, etc. given the [history](#) of the 2003 SARS outbreak. It was quick to announce shut down facilities when there were fewer than [10](#) confirmed cases.
2. **Universalisation of mask-wearing:** In Hong Kong, every resident wears a [surgical mask](#) and other protective gear such as hats with transparent covers to prevent infection from droplets while using public transport.
3. **Monitoring the movements of new arrivals:** In Hong Kong, new arrivals are issued an [electronic wristband](#), synced to an app that maps people's apartments and alerts the government when they break quarantine; similarly, restaurant and bar owners in small towns threaten send CCTV footage to the government if they see new arrivals in their establishments.
4. **Increased capacity of care facilities:** In Hong Kong, the government has [designated quarantine facilities](#) for those who have been in contact with infected persons and those with only a slight risk of infection are placed under home quarantine. Designated facilities include repurposed gymnasiums, theatre halls, holiday camps, newly constructed but vacant housing units, and so on
5. **Isolation beds:** Of Hong Kong's 40,000 hospital beds, [1,000](#) are **negative-pressure beds**. This means confirmed cases can be adequately isolated. "[Second-tier](#)" hospital beds have also been added.
6. **Public education campaigns:** The Hong Kong Government ran a large-scale [public-education campaign](#) to promote hygiene; graffiti is visible throughout the city urging people to buy masks.
7. **Enforcement of severe preventive measures:** Hong Kong enforced [extreme social distancing](#) measures, which have been [tightened](#) after the second wave. Gatherings of more than four people have been [banned](#).
8. **Effectively monitoring new situations:** In Hong Kong, pet [cats](#) and [dogs](#) tested positive for COVID-19. While the WHO has said that animals can't transmit the virus, the government is monitoring the situation.
9. **Innovations:** Hong Kong's airport has employed [self-driving robots](#) with UV lights to clean public areas and attempt to kill any bacteria, germs and microbes present.
10. **Economic stimulus package:** Hong Kong announced a HK\$137.5 billion [stimulus package](#). The package focuses on job retention, and includes an HK\$80 billion job security program to subsidize 50% of wages for affected workers for six months. Key government officials will reduce their salaries by 10% for one year.

However, Hong Kong let its [guard down too soon](#), with offices and public transport going back into business soon after positive cases began to reduce; this led to a second wave of the virus, and now potentially a third one too.

Japan

Date of first recorded case: [16 January 2020](#)

Number of confirmed cases: [11,135](#) (263 deaths as on 21 April 2020)

Strategies Employed

1. **Clear response goal and strategy:** The [goal](#) of Japan's strategy is to maximise suppression and minimise socio-economic damage. It also adopted an [integrated strategy](#) which includes targeting clusters, minimising severe cases and deaths, educating citizens, preventing stigmatisation against infected and medical personnel, protecting human rights, ensuring supply of essentials, strengthening testing and medicare system, leveraging capacity of local and private institutes, testing at doctor's discretion, treating mild cases at home and bolstering pandemic prevention measures including infection control measures.
2. **Testing strategy:** In Japan, only patients with the most [severe symptoms](#) were tested and the priority was [protecting the lives](#) of seriously ill patients. The focus was on intense [cluster tracking](#) instead of widespread testing.
3. **Citizen education:** The Japanese government published guidelines on techniques for [washing hands](#), [coughing](#) etiquette and [precautions to take at home](#) when a family member is suspected to have the infection. It also issued timely advisories for avoiding places with weak [ventilation](#).
4. **Promotion of the widespread use of face masks:** In Japan, [masks](#) were rationed and local shops sold fabric and coffee filters along with instructions for DIY versions of mask. The government is also planning to [distribute](#) reusable cloth face masks to roughly 50 million households.
5. **Normalisation of physical distancing and personal hygiene:** In Japan, there is an inherent culture of [greeting people](#) with a bow instead of a handshake / kiss on the cheek, wearing masks, washing hands regularly, and gargling with disinfectant solutions.
6. **Closure of educational institutions:** Japan's response included a quick closure of [educational institutions](#) and cancellation of public events.
7. **Imposition of stringent border control measures:** Japanese authorities simplified [administrative procedures](#) to bar foreign nationals from regions in China.
8. **Emergency economic package:** The Japanese government announced the prospect of a strong [stimulus package](#) of 56 trillion yen (10% of Japan's nominal GDP). Possible measures include deferral of tax and social insurance premiums, cash handouts for households and the expansion of zero-interest, no collateral loans to small and midsize businesses, such as tourism and restaurant industries.
9. **Drug testing:** Trial procedures and applications for quick approval of the flu drug [Avigan](#) as a treatment for the infected were done in Japan.

Singapore

First Recorded Case Date: [23 January 2020](#)

Number of confirmed cases: [9,125](#) (11 deaths as on 21 April 2020)

Strategies Employed

1. **Administrative strategy:** A government task force was set up in January, headed by Ministers of National development, Health, Communication & Cyber Security and Manpower. The task force is also composed of permanent secretary-level staff. The task force meets daily and reports to the cabinet and Prime Minister and issues regular press conferences. The medical directorate sources medical expertise. The political composition also helps with being accountable for delivering bad news and seeking support from the population. Every measure taken is then made available online <https://www.gov.sg/features/covid-19>¹.
2. **Contact tracing:** [App based contract tracing](#) was employed in Singapore to track people. An [app based visitor registration](#) system was also installed in all buildings coupled with temperature testing features. However, a human resource intensive tracing continues to be the main strategy, which complemented by the app,² hospital and contact tracing teams conduct tracing for each positive case. Enforcement teams ensure that those who are meant to isolate are isolating. There is also a ‘Stay- at- home’ app for the self-quarantined to take photos of themselves in their surroundings. Follow-up calls are made at random. A computerised system has been devised to keep track of cases and contacts and there is technology in place to issue the stay at home notices.
3. **Mobilisation of scientists:** Singapore quickly mobilised [research scientists](#) to develop new testing methods.
4. **Imposition of lockdown:** Singapore entered into a [month-long lockdown](#) beginning 7 April. During the lockdown, essential services, key economic activities, strategic businesses including those that are part of global supply chains, remained functional. Production inputs for essential services and goods were also considered part of them. A lead for each was appointed to look into the supply chain of the essentials¹. Home based learning will be conducted across schools and institutes of higher learning. Student care centres will remain closed, except for those students whose parents have to continue to work and safe distancing ambassadors will be designated. The government plans to distribute reusable face masks to all households and surgical masks will be conserved for medical workers. Those who do not comply with the circuit breaker measures will be [fined \\$300](#).
5. **Establishment of a task force for economic resilience:** A task force headed by the Minister of Finance was set up to look into economic resilience. The program announced encourages businesses to retrain staff, digitise records so that they can rehire staff that they might be retrenching right now at a future date. The approach is not to cut

¹ Interview with Ministry of Communications, Singapore

² Interview with Ministry of Communications, Singapore

back on globalisation and reshore industries, but double down on globalisation and ensure supply chains are more diversified³

6. **Economic stimulus package:** A SGD 48 billion [resilience budget](#) was announced to combat COVID-19, in addition to the previous budget of SGD 4 billion. This amounts to nearly 11% of Singapore's GDP. Job support schemes are a major focus area of the package and measures include co-funding wages in the range of 8 to 24% per worker. For the food industry and aviation & tourism industry, 50% and 75% of wages, respectively, will be co-funded by the government. The qualifying wage ceiling was also increased to SGD 4,600. Other relief measures include, but are not limited to, direct cash assistance to the self-employed, a freeze on government fees and charges for a year until 31 March 2021 and a waiver of university loan and interest payments. Supplementary budget has been provided for reskilling staff, especially in four key sectors - tourism, aviation, retail and food services, instead of laying people off⁴.
7. **Physical distancing at workplaces:** Singapore's Ministry of Manpower [issued 129 stop-work orders](#) and remedial orders to workplaces not following safe distancing measures. Further, employers not allowing employees to work from home, where possible, could either be [fined](#) not more than SGD 10,000 or jailed for a maximum of six months, or both.
8. **Creation of temporary holding facilities:** The Ministry of Manpower helped to ensure that foreign worker dormitories have lower density. Spare public housing has been converted into temporary residential housing areas and large facilities like exhibition halls are converted into temporary holding facilities⁵.
9. **Development of testing capacity:** A key priority in Singapore has been [testing](#) in large numbers (2000 people a day). Further, testing is free or heavily subsidised and is conducted for any symptomatics (through GP referral or by their own admission). There are no penalties for negative test results. Confirmed cases are hospitalised, and special provisions are made in hospitals while suspected cases have stay at home notice⁶.
10. **Incentivisation of testing and self-quarantine:** A daily stipend is issued to confirmed cases so that there is no reluctance to test. Citizens have also been sensitised on the importance of testing and on cluster outbreakers. The key message circulated was that someone continued to work despite not feeling well, and this led to a cluster outbreak⁷.
11. **Continuity of regular health care:** NCID manages the Covid healthcare and the Ministry of Health arbitrates between the trade-offs. There is a private and public health care system and within the public health care systems, there are boards/clusters which are semi-autonomous⁸.
12. **Universal masking:** 4 Surgical (N95) masks have been issued to each household following which cloth masks were issued to every household. All wet markets require

³ Interview with Ministry of Communications, Singapore

⁴ More job training support for four sectors hit hardest by Covid-19

⁵ Interview with Ministry of Communications, Singapore

⁶ Interview with Ministry of Communications, Singapore

⁷ Interview with Ministry of Communications, Singapore

⁸ Interview with Ministry of Communications, Singapore

masking. The government ensures that there is supply of masks before communicating the necessity of it⁹

13. **Supply chains:** The essential/non-essential categorisation is based on inputs that go into the production of certain essentials. A sector lead is appointed to look after the supply chain of a particular essential good. This includes an inspection of the inputs as well since “non-essential” inputs may be deemed essential¹⁰.
14. **Citizen education:** [Posters for public consumption](#) in all local languages were made to spread awareness. Communication aimed at “go where the eyeballs are” and framed as “**circuit breaker**” measures. Closed messaging apps like Whatsapp (97% of population) were used to relay timely, accurate and trusted information. The Gov.sg Whatsapp chatbot has 1 million subscribers (1/5th of population) and reach of the messages multiply through cascading effects like forwarding. The basic message circulated was, “You have to take responsibility for your family and the government will support by providing support and information”. Public Broadcasting, Social Media and other media platforms were activated for effective dissemination.
15. **Regular interaction with the press:** A credible pool of experts including members of the inter-ministerial task force and members from the medical fraternity, interacted frequently with the press to convey consistent messages. Citizens are kept abreast of plans and updates in this manner. Further, case by case updates were published on the [Ministry of Health website](#) and on the [COVID-19 Situation Dashboard](#) created. [Sector specific advisories](#) were also issued.
16. **Information booths for home-based learning:** Households without access to laptops in different locations share information about the COVID-19 measures through this platform. The initiative existed before, but has been repurposed specifically for public health communications. Sessions were typically held in markets, prisons etc. ¹¹

⁹ Interview with Ministry of Communications, Singapore

¹⁰ Interview with Ministry of Communications, Singapore

¹¹ Interview with Ministry of Communications, Singapore

South Korea

First recorded case date: [20th January 2020](#)

Number of confirmed cases: [10,683](#) (237 deaths as on 21 April 2020)

Strategies Employed

1. **Aggressive testing:** South Korea scaled its testing capacity by collaborating with the private sector to scale production to upto [100,000 kits per day](#) and increased testing to [15,000 tests](#) per day. To achieve this, it conducted testing by utilising [drive-through testing facilities](#), [public phone booths](#), and an [olympic sports complex](#). It also provided universal health care in the country to prevent cost barriers.
2. **Citizen education:** Information about a patient's [travel history](#) was shared with the public in South Korea. Apps were also developed to alert citizens of [cases within a 100-meter](#) vicinity. Also, public communication platforms were used to broadcast the importance of face masks and social distancing.
3. **Continuous monitoring:** In South Korea, quarantined individuals were required to mandatorily install an app to enable monitoring. Legislation was enacted to give the government the authority to collect [mobile phones, credit cards, and other data](#) from those who tested positive to reconstruct their recent whereabouts. Failure to comply with these attracted fines of \$2,500.
4. **Contact tracing:** To isolate the spread of virus and enable **early identification** of source of cluster-cases (Shincheonji Church, Call centre) extensive contact tracing was done in South Korea.
5. **Risk-assessment for case management:** A risk based treatment/quarantine protocol was used in South Korea. High-risk patients (those with pre-existing illnesses) were prioritised for hospitalisation. Patients with moderate symptoms were placed under observation at repurposed isolation centres (erstwhile corporate training facilities). Patients with mild symptoms and contacts of infected patients were required to self-quarantine for two weeks. The local monitoring teams made [calls twice daily](#) to check compliance with quarantine protocols and ask about symptoms.
6. **Economic relief package:** The South Korean government announced an [11.7 trillion won](#) economic relief package. 20% of the package was allocated to health facilities and 27% toward medium and small scale enterprises. The package was also used to support the subsidy of 454,900 won (INR 27,958) for meeting basic living expenses. The subsidy was made available to anyone practicing self-isolation, irrespective of symptoms.
7. **Adoption of E-education for students:** In South Korea, [online education](#) for students began from 9th April.

Taiwan

First recorded case date: [21 January 2020](#)

Number of confirmed cases: [425](#) (6 deaths as on 21 April 2020)

Strategies Employed

- 1. Lessons from previous outbreaks:** Taiwan's experience with SARS, Avian Flu, H1N1, H7&9, Ebola, MERS etc. has led to a high state of alertness, and public adoption of safe and sanitary behaviour, including wearing masks and maintaining a sense of personal hygiene.
- 2. Media/Social Media surveillance:** By late December, Taiwanese media surveillance picked up rumours from Weibo chat rooms about unexplained SARS-like pneumonia cases in China, that weren't responding to regular drugs. The epidemic intelligence centre started to investigate and made enquiries with the WHO and Chinese CDC. The government quickly decided that Wuhan flights would have an onboard quarantine¹².
- 3. Declaration of the virus as a notifiable disease by law:** A surveillance case definition was built with a listing of the symptoms and types of diagnostic tests that need to be conducted, along with the corresponding lab specimens needed¹³. The [current case definition](#) is as follows, "Suspected case: Meets [clinical presentation criteria](#) but not laboratory proven, plus history of close contact with symptomatic confirmed case(s) within 14 days prior to symptom onset. Confirmed case: Meets [laboratory diagnosis criteria](#), regardless of clinical signs and symptoms."
- 4. Continuous expansion of case definition:** In order to include anyone who may be infected with the virus, cases were initially defined based on the geographical origin of the suspected patient. As the number of outbreaks increased, case definition was updated to include additional geographical locations. For example, initially the case definition required "exposure to Wuhan", this was expanded to include Guangdong and so on. The expansion was mindful of testing and lab capacity¹⁴. Current case definition is symptom based along with contact history as described above. Further guidelines can be found [here](#).
- 5. Administration and coordination of the response:** This was achieved through a series of timely [policy actions](#) implemented by [Central Epidemic Command Center \(CECC\)](#) representing various ministries. The Commander of the CECC is the Minister of Health and Welfare and the Deputy commander is the Deputy of Minister of Interior. There are 3 big divisions: Surveillance, Frontline and Logistics and several sub-divisions including Hospital response team, Community disease prevention, Health response

¹² Source: Interview with CDC, Taiwan

¹³ Source: Interview with CDC, Taiwan

¹⁴ Source: Interview with CDC, Taiwan

team, Logistics, Informatics, Administration, and Communications. Internal meetings are held twice a week, while expert meetings take place on an ad-hoc basis. It is currently in its highest level of activation and has implemented a [number of measures](#)¹⁵.

6. **Hospital infection control and preparedness:** During SARS, hospital outbreaks took place when infected patients coming into hospitals were not sufficiently isolated. This led to the formulation of infection control plans in hospitals. Hospitals are now pre-identified for patients of specific diseases and annual exercises are conducted for infection control, patient transfers, PPE gear, disinfection etc. Other hospitals that are not in the network have to go through infection control audits and demonstrate how patient management will take place.¹⁶
7. **Hospital transfer mechanism:** Patients still have the liberty of going to whatever hospital they prefer. All hospitals and teaching centres have at least partial capacity to isolate patients. The hospitals can use a negative pressure room or (next order of priority) a single occupancy room. Alternatively, hospitals have a transfer protocol to transfer patients to Covid-specific care centres.¹⁷
8. **Widespread testing:** Island-wide testing sites [were made available](#). Taiwan started off with partnerships with 8 contract laboratories which were then expanded. Currently, Taiwan can conduct up to 3000 tests a day through about 37 laboratories. The National health insurance system ensures that patients pay minimal fees to cover administrative charges. Testing cost per patient is approximately 100 USD per person in a private lab for a PCR-based test.¹⁸
9. **Testing Strategy:** Tests can be prescribed to any suspected patient. Acutely symptomatic patients are reported through the disease surveillance system by doctors. These patients are isolated at the hospital. Patients without typical symptoms can also test, without reporting through the surveillance system. They are asked to home isolate until their test results are negative. If they test positive, the patients are recalled to the hospital. Testing is also done for close contacts of confirmed cases, even if these contacts were asymptomatic. Some of these asymptomatic patients may become symptomatic later. Taiwan is currently not doing random testing, nor is it pool-testing. Antibody testing is not yet widely available.¹⁹
10. **Prevention of community transmission:** To suppress '[silent transmission](#)', physical distancing, serious hygiene measures and closure of offices and educational institutions were imposed. In Taiwan, this was done in two [phases](#). The first phase restricted public gathering and enforced public health safety measures. The second phase, prohibited all non-essential activities.

¹⁵ Source: Interview with CDC, Taiwan

¹⁶ Source: Interview with CDC, Taiwan

¹⁷ Source: Interview with CDC, Taiwan

¹⁸ Source: Interview with CDC, Taiwan

¹⁹ Source: Interview with CDC, Taiwan

11. **Implementation of border controls:** A [combination of measures](#) including travel bans and border closures were imposed to stop importing infections. [Air passengers](#) flying from infected areas were screened and [travel restrictions](#) from mainland China were imposed quickly. Currently only permanent residents and Taiwanese citizens can come in (but have to quarantine for 14 days). Foreigners can leave but cannot enter. Taiwan will eventually ease border controls gradually, depending on the surveillance and analysis of the spread/number of cases seen globally.
12. **Regulation of public gatherings:** Taiwan's CECC established a set of [guidelines](#) to be followed by organisers. These include, plans for risk assessment, collecting information on participants and monitoring them, and provision of adequate ventilation and hand wash facilities.
13. **Mask wearing and mask production:** By mid-January, demand for masks was at [1.3 million per day](#). Wearing masks on public transport was made mandatory. The Taiwanese government oversaw a controlled distribution of surgical masks and [fixed their price](#). [Domestic mask production](#) was ramped up to create local supply. Presently, [15 million masks](#) are produced daily. Furthermore, mask wearing and temperature checks are [mandated](#) at offices where physical distancing is not possible.
14. **Plan for vigorous contact tracing:** In order to prevent second/third waves of outbreaks, vigorous contact tracing has been undertaken. A contact is defined as anyone with face to face contact for 15 mins or more (within 6 ft). Through case investigation, authorities may identify and list additional contacts who meet the definition. It was found that household contacts have the highest incidence of transmission, for instance those who eat/live together.²⁰
15. **De-isolation criteria:** The initial criterion was that when a patient has 2 consecutive negative tests, the patient can be de-isolated. However, since then China, Japan and South Korea have reported cases of potential "re-infection" and "chronic carriers", three consecutive negative tests are now required.²¹
16. **Embracing big data:** In Taiwan the national health insurance [databases](#) were integrated with immigration and customs information to trace potential cases. Epidemiological modelling conducted by academics in Taiwan are yet to be mainstreamed into policy decisions.²²
17. **Mobile phone tracking:** Taiwan's Department of Cyber Security runs the system for [monitoring](#) people in home quarantine. In this system, phone signals alert the police if

²⁰ Source: Interview with CDC, Taiwan

²¹ Source: Interview with CDC, Taiwan

²² Source: Interview with CDC, Taiwan

quarantine rules are broken. Local officials react within 15 minutes. [Penalties](#) can be as high as \$33,000. Authorities call twice a day at random to ensure presence at home.

18. **Mass-messaging to alert potentially affected areas:** When coronavirus cases were discovered on the Diamond Princess cruise ship after a stop in Taiwan, text [messages](#) were sent to mobile phones of all those who had cell signals present at the location and time of tourists' presence. This listing included each restaurant, tourist site and destination that the ship's passengers had visited during their shore leave.

Vietnam

Date of first recorded case: [23 January 2020](#)

Number of confirmed cases: [268](#) (As on 21 April 2020)

Strategies Employed

- **Swift action:** Vietnam undertook a quick [response and propagated the culture](#) of neighbourhood watch. The Ministry of Health issued urgent dispatches on outbreak prevention to relevant government agencies before it [recorded its first case](#). [Public gatherings](#) of more than 2 people were banned. Additionally, border controls were tightened and hospitals and local health departments were on high alert for the new pneumonia cases on January 3 – only three days after confirmation of outbreak in China.
- **Voluntary sharing of personal health information:** This was facilitated through a [government-launched app](#) called NCOVI. It has become the top free app in Vietnam since its launch on March 10.
- **Formalisation of intra-governmental cooperation:** Deputy Prime Minister Vu Duc Dam was appointed as the head of the steering committee to combat COVID-19 and senior officials were held accountable.
- **Strong health messaging:** The song “[Ghen Co Vy,](#)” helped build public awareness of the new virus and the importance of hand washing.
- **Timely communication:** Any developments of the outbreak were communicated by the government and the media, combined with up-to-date research on the new virus through the website <http://ncov.moh.gov.vn> and the NCOVI app.
- **Social media:** Individual updates and reviews about the availability and quality of government-run dorms, food, health checkups, and testing, attracted thousands of reactions on Facebook. Hundreds of pictures of carefully packaged breakfasts, lunches, dinners, and midnight snacks, have been circulated so widely, that the two-week isolation period is favorably perceived, which has encouraged compliance.
- **Prevention of hoarding:** The government inspected pharmacies nationwide and withdrew business licenses of those that increased prices of face masks, hand sanitisers and medical gloves
- **Hospital Control:** Temporary hospitals have been set up to cure COVID-19 patients, for example the 300-bed field hospital in Vinh Phuc in the first outbreak or two field hospitals to quarantine up to 1000 people in Hanoi. City authorities have instructed hospitals to conduct effective training for healthcare workers as well as monitoring the process of taking care of infected patients to prevent the outbreak within hospitals
- **Credit organizations:** Debt payment deadlines and borrowing interest rate and exemption for enterprises heavily affected by the pandemic.
- **Cash transfer:** Poor households would receive an aid of 1,000,000 VND per person per month.

- **Access to testing**: 10 COVID-19 testing kiosks have been set up all around Hanoi. Five thousand quick test kits—which give results after 10 minutes of testing—were distributed by the Ministry of Health to these testing kiosks
- **Transparency**: Government officials publicly explained that data and information from four Public Health Emergency Operation Centers of Vietnam were directly connected to the Centers for Disease Control and Prevention USA and, therefore, shared openly to the global database
- **Automatic rice ATMs**: This could help with the provision of free rice to the needy.

EU: Overall

First recorded case date : [24th January 2020](#) (France)

Number of confirmed cases: [902,547](#) (Europe) (93,297 deaths as on 21 April 2020)

Strategies Employed

1. **Availability of medical stocks:** The EU assessed medical needs, mapped and monitored all [medical stocks](#) (including medicines and medical equipment) and its related production capacity.
2. **Transparent data sharing:** The EU ensured all [data](#), viz. epidemiologic, scientific, stocks and supply, state capacity for protection of peoples was transparently shared across countries.
3. **Provision of funding support:** The [European Central Bank](#) made a €750 billion fund for a pandemic emergency purchase program. The program will be operational until the end of 2020. The funding support amounts to 7.3% of euro area GDP.
4. **Travel restrictions:** The schengen space was closed and [travel](#) between European and Non-European countries was restricted.
5. **Liquidity and cash flow:** At the EU level, one trillion in [guarantees](#) from member states for bank loans was pledged.
6. **Mobilisation of funds for research:** The EU designated [€140 million of funds](#) for leading research and selection of 17 projects.
7. **Integrated political response:** EU unlocked its [integrated political crisis response](#) (IPCR), which is a framework for quick and coordinated political response in crises. The IPCR streamlines information sharing and eases collaboration and coordination.
8. **Amendment of regulations:** The EU amended council regulations to provide [financial help to most affected](#) States. It also made amendments for [mobilising investments](#) in healthcare systems and other economic sectors of the States. The EU also [suspended slot requirements](#) of airlines, to support the aviation sector.
9. **Continuity of supply chains:** Necessary amendments to [transportation policies](#) were made to ensure smooth freight and continuity of supply chains across the Union. These include free movement of “transport workers, ‘green corridors’ - priority lanes for freight transport, flexibility for rules on driving and rest times.”
10. **Economic support measures:** Across the Union, [liquidity support schemes](#) for firms and workers were scaled up to 13% of GDP. The [general escape clause](#) of the Stability and Growth Pact was activated, which provided States’ greater flexibility in their budgetary matters. A [temporary framework](#) for state aid measures was adopted to support the economy.
11. **Increase in amounts of state-aid in the food production sector:** Develop policy measures for [Fisheries and Agriculture](#) such as simplification / derogation of

procedures, modification of rural development programmes, increased flexibility to transfer funds between programmes, allowing compensation and storage-aid.

12. **Provision of financial support to affected industries:** The European [corona response investment initiative](#)²³ was set up to provide €37 billion to support the healthcare sector, the labour market and SMEs across all affected sectors.
13. **Provision of international aid:** The EU is involved in [sustaining](#) aid to developing countries.
14. **Preservation of privacy while conducting contact tracing:** A coalition of techies and scientists drawn from eight countries are working on contacts-tracing proximity technology for COVID-19 in compliance with [privacy rules](#).

²³ More details [here](#)

Other Countries

1. UK

Date of first recorded case: [31 January 2020](#)

Number of confirmed cases: [124,743](#) (16,509 deaths as on 21 April 2020)

Strategies employed: Use of [behavioural science](#) to ‘nudge’ people to adopt precautionary behaviours and adoption of [population-wide](#) social distancing, combined with home isolation of cases and school and university closure.

2. Israel

Date of first recorded case: [21 February 2020](#)

Number of confirmed cases: [13,883](#) (181 deaths as on 21 April 2020)

Strategies employed: To facilitate quarantine enforcement, an [emergency law](#) was passed to enable the use of mobile data to track people who may have come in contact with COVID-19 patients. A [financial aid package](#) was released for businesses and employees and [drones](#) were deployed to enforce curfews, check people’s temperatures and deliver announcements.

3. Senegal

Date of first recorded case: [2 March 2020](#)

Number of confirmed cases: [377](#) (5 deaths as on 21 April 2020)

Strategies employed: Coronavirus tests were turned around in 4 hours and testing capabilities were ramped up further by working on developing a handheld coronavirus test kit that can diagnose COVID-19 within [10 minutes](#). \$221 million were allocated for financial support to deal with economic challenges from the IMF. An [economic and social resistance program](#) was set up and [graffiti artists](#) were engaged in building awareness on Covid-19.

Appendix 1 : WHO Guidelines for Community Transmission

Highest priority

1. Enhance whole-of-society coordination mechanisms to support preparedness and response, including the health, transport, travel, trade, finance, security and other sectors. Involve public health Emergency Operations Centres and other emergency response systems early.
2. Sensitise the public to their active role in the response.
3. Engage with key partners to develop national and sub-national preparedness and response plans. Build on existing plans such as influenza pandemic preparedness plan.
4. Enhance hospital and community preparedness plans; ensure that space, staffing, and supplies are adequate for a surge in patient care needs.

Secondary priority

1. Establish metrics and monitoring evaluation systems to assess effectiveness of measures. Document lessons learned to inform on-going and future preparedness and response activities.
2. Prepare for regulatory approval, market authorization and post-market surveillance of COVID-19 products (e.g. laboratory diagnostics, therapeutics, vaccines), when available.

Read the entire guidelines [here](#).