

International benchmark
survey of COVID-19 crisis
management - June 2020

Responses from 9 Asian and
European countries

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Foreword

The COVID-19 epidemic affected the entire world during the first half of 2020, with a peak moving gradually from east to west. Governments' top priority was to limit and then eliminate the number of infections and deaths among their countries' population. Observers including the media considered that some countries had reacted better than others, with greater speed and efficiency, or had been better prepared. In fact, the strategies employed and the "mix" of measures implemented varied greatly from country to country in an effort to leverage the strengths or adapt to the weaknesses and constraints of each country.

This benchmark survey was conducted by our consultants during the peak period of the epidemic and therefore goes back to April 2020. The work was carried out on a limited number of countries, those most affected at the time, and does not take into account the post-lockdown strategies adopted subsequently.

From hindsight, therefore, the analysis will have to be updated for the same countries by including the most recent developments in the health situation and analysing post-lockdown strategies and any resurgences of the pandemic. Likewise, it will have to be expanded to the USA and the South American countries most affected, including Brazil.

That said, **this specific feedback on the beginning of the crisis, with the benefit of several months' hindsight and the experience of lockdown exit and the end of the crisis, is crucial, as it is the first measures implemented that triggered subsequent events** and that will require corrective action in order to better prepare for future health crisis-related events. Each country has established feedback procedures (e.g. parliamentary committees in France) or will do so in order to draw the conclusions of the crisis: **the international feedback provided by this type of benchmarking survey has the merits of pinpointing and putting into perspective the weaknesses identified in each country**, in order to improve measures in the future, drawing on the best practices identified, and avoid falling into the trap of seeking scapegoats.

Our main objective in drawing up this report was to present an objective view of the various strategies and reactions adopted by the countries under review.

"In situations of uncertainty, let us refrain from making statements, doubting, judging or condemning."¹

¹ Quotation by Henri-Frédéric Amiel in *Journal intime*, 24 May 1875.

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The background features several decorative purple elements: a large circle with a double-line border on the left, a smaller solid circle at the top center, a large solid circle on the right, and a large sphere with a gradient and shadow at the bottom center. There are also several smaller solid circles and wavy lines scattered throughout.

**A benchmark survey
geared to
observation and
action**

1

At the beginning of 2020, the COVID-19 epidemic struck the entire world, wreaking havoc in Asia before rapidly reaching Europe, then North America, South America and Africa. Governments' top priority was to limit and then eliminate the number of infections and deaths among their countries' population. Some countries were considered to have reacted better than others, with greater speed and efficiency, and to have been better prepared, while others were felt to have been less well prepared. In fact, the strategies employed and the "mix" of measures implemented varied greatly from country to country in an attempt to play on the strengths - or weaknesses - of each country.

How can one be objective?

In drawing up this international benchmark survey of COVID-19 crisis management, the EY Health & Social team seeks to provide means of comparison between strategies, understand government decision-making systems and identify the most effective measures in place and key success factors in tackling the epidemic.

This observation exercise is designed to provide feedback in the midst of the crisis: at time of writing, our EY team is still under lockdown. We hope that lessons may be drawn from this analysis that will enable France to be better prepared in the event of a future epidemic.

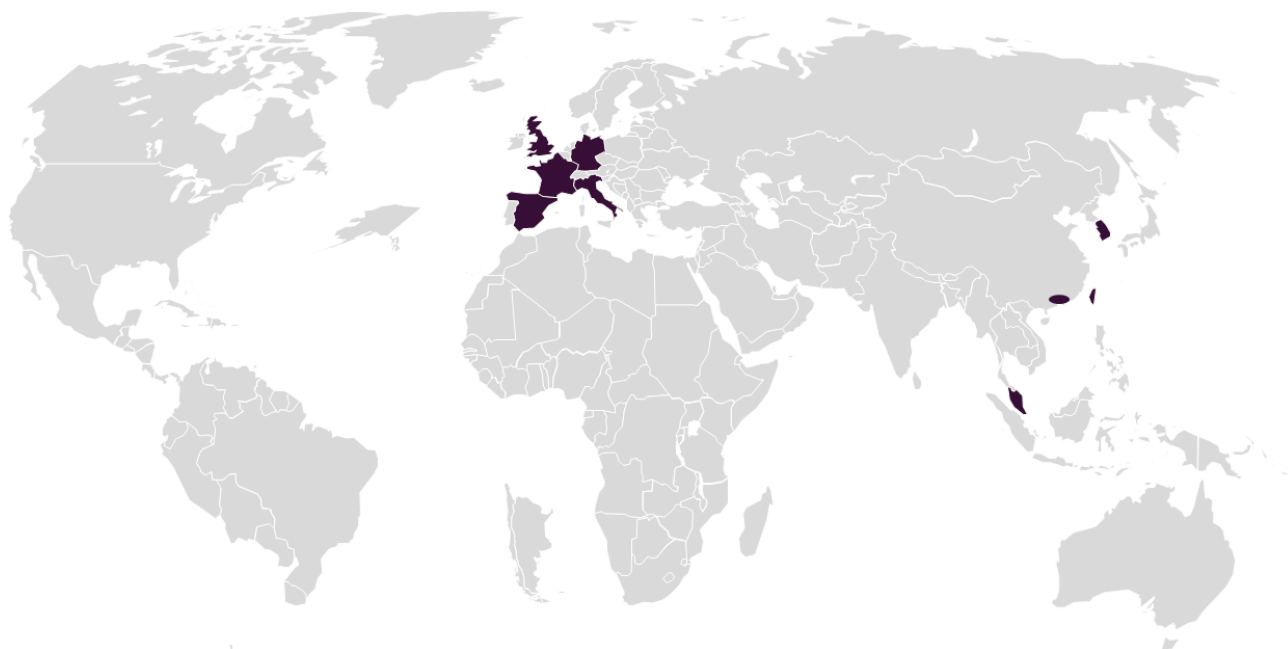
Surveyed countries

We selected a sample of nine countries in accordance with the following criteria:

- ▶ Extent of the epidemic at the date of the survey (April 2020): accordingly, we selected countries in Asia and Europe, the first regions to be affected - as a reminder, at the date of this report the epidemic had not really affected the American continent;
- ▶ The virulence of the epidemic or, on the contrary, an usually low mortality rate: countries such as Italy and Spain, on the one hand, and Germany, on the other, could not be left out in our opinion;
- ▶ Accessible and reliable data.

All in all, 4 Asian and 5 European countries were reviewed. They are shown here in chronological order of first cases:

- | | |
|--------------|----------------|
| 1. Taiwan | 6. Italy |
| 2. Hong Kong | 7. UK |
| 3. Singapore | 8. Spain |
| 4. France | 9. South Korea |
| 5. Germany | |



Country	First occurrence ²	Population in millions ³	Population density in 2018 (pers./km ²) ⁴	Proportion aged over 65 ⁵	No. of cases per million inhabitants ⁶	No. of deaths per million inhabitants ⁷
Taiwan	21-Jan.	23.59	669.1	14.55%	19	0.3
Hong Kong	22-Jan.	7.45	7,075.1	17%	149	0.5
Singapore	24-Jan.	5.64	8,274.1	11.80%	7,005	4
France	25-Jan.	66.99	119.1	19.84%	2,411	451
Germany	28-Jan.	82.9	236.1	21.47%	2,245	106
Italy	31-Jan.	60.42	201.6	22.68%	3,924	568
UK	31-Jan.	66.4	275.2	18.31%	4,374	615
Spain	1-Feb.	46.8	93	19.29%	6,228	580
South Korea	21-Feb.	51.8	526.2	14.29%	237	5

Benchmark methodology

- Coverage of four main issues** regarded as key success factors in order to structure our research and observations:
 - Early warning and timing of initial measures;
 - Equipment supply strategy;
 - Barrier strategy adopted;
 - Medical response by healthcare facilities.
- Literary review:** our team analysed data, articles and studies published during the crisis, recording details regarding the chronology of events, measures decided by governments, communications employed, movements in public opinion, cooperation between stakeholders, mutual aid initiatives, etc.
The individual country profiles presented in part 3 of this survey are the direct outcome of this procedure.
- Comparative inter-country analyses** based on each of the key issues (part 2). These analyses are more concise and descriptive than the individual country profiles.
- Summary of the findings of the benchmark survey.

Findings of the benchmark survey

The measures implemented by governments in response to the first cases of COVID-19 identified in their country or in neighbouring countries soon highlighted the different approaches adopted. On the one hand, drastic measures were adopted in the Asian countries to:

- ▶ Slow the entry of the virus into their territory: border controls and testing, placement in quarantine;

² Coronavirus Source Data, Our World in Data (ourworldindata.org), 16 June.

³ World Bank data, 2018.

⁴ United Nations Department of Economic and Social Affairs statistics - population.un.org.

⁵ Ibid.

⁶ Worldometer, 16 June.

⁷ Ibid.

- ▶ Optimise management of strategic stockpiles: ban on exports, boosting local production of personal protective equipment (PPE) and medical equipment, commandeering from private sector companies, beginning of distribution of strategic stockpiles throughout the territory;
- ▶ Foster international cooperation;
- ▶ Curb the spread of the virus by making it compulsory to wear masks.

On the other hand, European countries pursued policies of response rather than anticipation and failed to implement suitable measures at an early stage. No special measures were taken to limit the risk of the virus entering the territory: late closure of borders between EU countries, mere information upon arrival of incoming flights from Asia without restrictive measures for passengers, etc. The low level of strategic stockpiles of masks may have slowed distribution to persons most at risk in the territory (self-employed healthcare professionals, support for establishments short of materials, other occupations at risk) in order to preserve stocks at first. Despite the existing cooperation within the EU, European countries were unable to take concerted decisions and implement them in a coherent manner: total lockdown applied successively in Italy then France, initial “herd immunity” strategy in the UK and no strict lockdown in Germany.

After the epidemic ramp-up phase, the flattening phase revealed similar discrepancies between the policies pursued. Asian countries succeeded in harnessing tracking technology to tackle the epidemic, while European countries only attempted to use it during the post-lockdown phase. For a long time, European countries continued to deal with the shortage of strategic stockpiles: European private-sector companies voluntarily provided support to governments to try to relieve certain shortages, sourcing from Asian countries was carried out on a competitive market (lower quality of mask manufacture, need for customs controls) and distribution also generated its own series of problems (occupations to be supplied, organisation of sales outlets, continuity).

Different countries’ response to the crisis can only be analysed by considering, at the same time, experiences of similar health crises (SARS), political structures, the influence of the press, existing healthcare facilities and their responsiveness and, lastly, the acceptability of measures recommended by scientific advisers among the population. This survey, however, confirms the importance of building strategic stockpiles in order to manage a crisis through the ability to control the entry of the virus into the territory and curb its spread. Experience-sharing between stakeholders at both national and international levels (health, internal security, economy, budget, etc.) is essential if we are to learn our lessons from this epidemic and build shared response strategies.

From hindsight, the analysis will have to be updated for the same countries by including the most recent changes in the health situation and analysing post-lockdown strategies and any resurgences of the pandemic. Likewise, it will have to be expanded to the USA and the South American countries most affected, including Brazil.

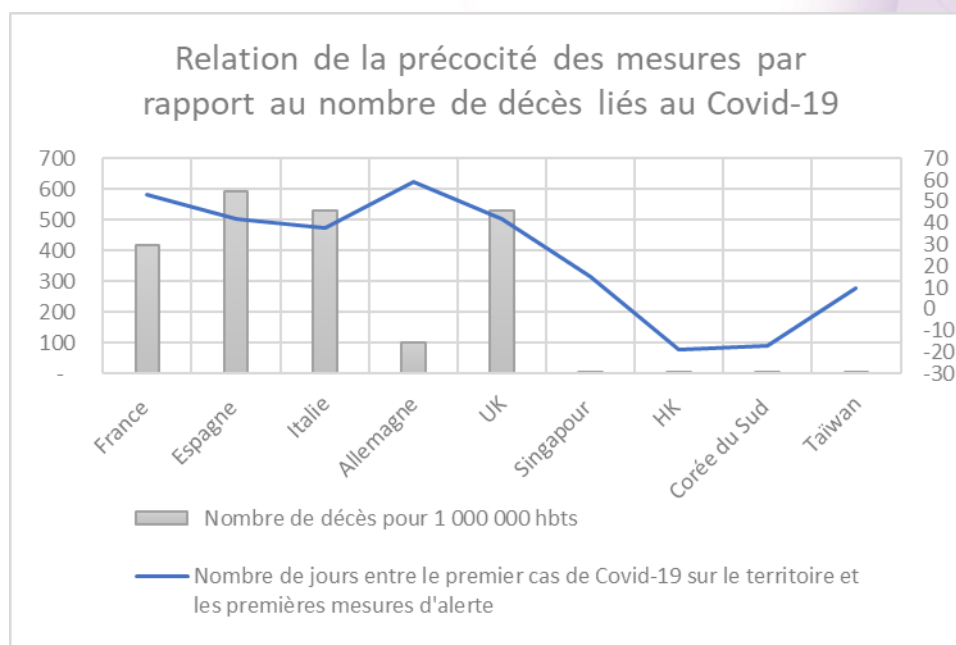
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**Issue-based
comparisons**

Early warning and timing of initial measures

The consequences of the COVID-19 epidemic were largely influenced by the responsiveness of governments in each country and by the nature of the decisions taken.

The graph below shows the correlation between the timing of the first recorded case and the first measures implemented, plus the death toll per million inhabitants up to the date of this benchmark survey. It is clear that the earlier the warning was triggered before the number of cases tested positive for COVID-19 began to rise, the less serious the consequences were for the country concerned.



Key to graph:

Title: Relation between timing of response and COVID-19 death toll

Horizontal axis: France - Spain - Italy - Germany - UK - Singapore - HK - South Korea - Taiwan

Grey bars: Death toll per million inhabitants

Blue curve: Time lag (no. of days) between first case of COVID-19 in the country and first warning measures

We conclude from this analysis that Asian countries reacted immediately following the announcements made by the Chinese government, sometimes even prior to the outbreak of the disease in the country. For example, some countries including Hong Kong and South Korea implemented restrictive measures before the occurrence of the first case of COVID-19 in the country. Notably, Hong Kong issued an orange level health warning on 4 January 2020, while the first case diagnosed positive in the country did not occur until 23 January 2020. The other South-East Asian countries covered by our survey also posted reduced response times, less than 20 days in the case of Singapore and Taiwan.

The responsiveness of these countries is mainly due to their experiences with Severe Acute Respiratory Syndrome (SARS). SARS mainly affected China and Hong Kong between 2002 and 2003 and caused 774 deaths. This experience prompted the various South-East Asian countries to develop policies for handling health emergencies.

In the European countries except Germany, we note a correlation between the death toll and the decision-making time lag. While the first warning measures in terms of lockdown were taken at the same time as in the other European countries, the difference in Germany lies in the testing strategy implemented by the government. Accordingly, Germany swiftly set up testing facilities in collaboration with independent laboratories, with the aim of conducting 100,000 tests per day, and isolation measures were applied to those tested positive for COVID-19.

Lastly, longer delays in making decisions in the other European countries may be attributed to:

- ▶ **The time taken by governments and prevailing health systems to recognise the risk:**
 - Under-estimation of the risk of the disease's spread,

- Different degrees of availability of diagnostic and protective equipment (tests, masks) and intensive care apparatus (ventilators) depending on the country.
- ▶ **A random factor:** Organisation of events that became genuine clusters leading to wider spreading of the virus. Clusters that had a significant impact on the spread of the disease in the respective countries included football matches in the UK, Spain and Italy and a major religious event in France. Attendance of these events by persons carrying the virus led to the creation of significant clusters.
- ▶ **Clarity of scientific recommendations:** The interaction between expert scientific assessment and reaction by decision-makers was not always as swift or clear as it could have been. Accordingly, Boris Johnson's government was slow to trigger emergency measures.

The timing of decisions had a considerable impact on the spread of COVID-19. Speed of action by governments in each country was influenced by historical, organisational and random factors as well as the clarity of recommendations issued by scientific advisers.

Equipment supply strategy

The supply of PPE (masks, goggles, gloves and gowns) and screening tests has been one of the major challenges faced by countries affected by the COVID-19 epidemic over the past months. Two main trends may be identified with regard to the management of stocks and supplies:

- ▶ **Optimisation of supply strategies** at times of crisis in Asian countries (Hong Kong, Singapore, Taiwan, South Korea) that took stock of epidemiological risk following the SARS epidemic in 2003.
- ▶ **Virtually universal shortage of equipment** in European countries at the start of the crisis, plus supply strategies combining the deployment of domestic production facilities with the securing of imports

In Europe, all countries were impacted by a shortage of PPE at the start of the epidemic, due to insufficient stockpiles and limited manufacturing capacity

In all European countries, stockpiles of PPE and local industry manufacturing capacity were insufficient at the start of the epidemic. These countries were faced with an unprecedented rise in demand for equipment, as in France where some hospitals multiplied their consumption of face masks by 20 at the peak of the infection curve.

The supply question was therefore tackled at a very early stage by these countries. In fact, European countries have a relatively limited capacity for producing medical equipment (PPE as well as ventilators): there are only four face mask manufacturers in France and Spain has only one production facility. Germany is the exception, as it generates a €20 billion trade surplus on the sale of pharmaceutical compounds (reagents, drugs, active ingredients), medical apparatus (ventilators) and PPE (gloves, masks, etc.), but even Germany failed to cover nationwide demand for PPE with domestic production at the start of the crisis.

All the European countries seem to have lacked preparation in face of the risk of epidemic or to have grossly underestimated the risk. This is shown, for example, by the reduction in strategic stockpiles of PPE in France and the UK over the past few years. In France, the stockpile of face masks fell from 1.7 billion in 2009 (1 billion surgical masks and 723 million FFP2 masks) to 150 million surgical masks at the start of the epidemic⁸. In the UK, the value of the PPE stockpile (masks, gloves, gowns, etc.) fell 40% over the past six years, from GBP 831 million (€934 million) in 2013 to GBP 506 million in March 2019 (€568 million)⁹. These facts prompt legitimate questions regarding the management of strategic stockpiles.

Accordingly, the lack of preparation among European countries led to shortages at healthcare facilities in the midst of the crisis. In the UK, a survey published by the British Medical Association¹⁰ on 3 May showed that half of doctors had to procure PPE by their own means as it was not supplied by the NHS. Having spoken of problems in the distribution of

⁸ Stanghellini Cédric, "Comment la France est passée d'un stock d'Etat de 723 millions de masques FFP2 à la pénurie", *LCI*, 21 March 2020.

⁹ Harry Davies, David Pegg and Felicity Lawrence, "Revealed: value of UK pandemic stockpile fell by 40% in six years", *The Guardian*, 12 April 2020.

¹⁰ "BMA survey reveals almost half of doctors have relied upon donated or self-bought PPE and two thirds still don't feel fully protected", *British Medical Association*, 3 May 2020

PPE, the government finally admitted that the UK was facing a shortage¹¹. Meanwhile, Public Health England adapted its advice on the use of equipment in accordance with the shortage, in some cases recommending the reuse of gowns or use of alternative equipment¹². Shortages of PPE were also recorded in France, Italy, Spain and Germany.

To meet the growing demand for PPE, screening tests and ventilators, the European countries mobilised available domestic production capacity where possible. In France, for example, Air Liquide Medical Systems, the sole producer of ventilators, cooperated with Renault, Michelin and ST Microelectronics¹³. Again in France, LVMH reorganised its fragrance plants in order to produce hydroalcoholic gel. In Spain, Seat car manufacturer mobilised its resources to produce ventilators,¹⁴ while in the UK, Burberry acquired the necessary techniques to manufacture surgical masks for the NHS¹⁵. Meanwhile, Germany harnessed the services of companies such as Dräger and Lowenstein, two of the world's leading manufacturers of ventilators for artificial respiration.

This deployment of production facilities in Europe, however, failed to cover the countries' total requirements, thus compelling them to identify and secure external sources of supply.

In Asia Pacific, the authorities rapidly organised supplies and distribution of PPE and screening tests.

Having taken stock of the risk of epidemic following the SARS epidemic in 2003, the Asia Pacific countries (South Korea, Singapore, Taiwan and Hong Kong) were already prepared in terms of logistics and were able to respond swiftly to the outbreak of the epidemic in China. Generally speaking, the four countries under review had previously built up strategic stockpiles of equipment and/or took steps very early on to organise the production, supply and distribution of this equipment.

Unlike the European countries, the Asia Pacific countries had strategies for stockpiling and emergency procurement or manufacture of PPE that were designed to stand up to a major epidemic. Some countries had a large amount of PPE before the crisis, such as Singapore which had a stockpile of 16 million N95 masks, or 3 masks per inhabitant (solely for use by the civilian population). The governments of these countries mobilised the production resources at their disposal to cope with increased demand and avoid shortages: in Singapore, Wellchem Pharmaceuticals was enlisted to supply and stock masks for medical staff, while Veredus jointly developed the first PCR test with a government agency for use during border controls¹⁶; in South Korea, the government took control of mask production in early March and decided to distribute 80% of the 10 million masks produced every day in pharmacies, while in early February the authorities issued an emergency authorisation for the test developed by Kogene Biotech Bio Ltd and made it available three days later; in Taiwan, the government mobilised the army for line production of masks and nationalised postal services to distribute them; in Hong Kong, the government subsidised local production of masks leading to the production of over 12 million masks per month at 8 authorised production facilities.

This industrial deployment was supplemented by export limitation measures, as in South Korea, and even the commandeering of PPE from travellers arriving in the country, as in Singapore.

Global shortage of equipment putting pressure on supplies

The accelerated spread of COVID-19 and the ensuing surge in demand for equipment led to tension between countries importing PPE and test equipment. While Asian countries that relied on China for the supply of protective equipment succeeded in becoming self-sufficient, this was not the case among European countries or the USA. These countries were therefore drawn into a race for supplies from Chinese manufacturers and other countries.

To guarantee sufficient supplies, governments sometimes enlisted companies to purchase and import equipment. In Germany, for example, large companies were called upon to support the government initiative to buy masks from China. The European Union even set up a joint procurement initiative for Member States to procure supplies of personal

¹¹ Molly Blackall, "PPE including gowns and masks running out, admits UK government", *The Guardian*, 18 April 2020.

¹² "Coronavirus: Concern over protective kit guidance change", *BBC*, 18 April 2020.

¹³ Eric Bergerolle, "COVID-19: comment les constructeurs auto se reconvertissent dans les respirateurs", *Challenges*, 31 March 2020.

¹⁴ *Ibid.*

¹⁵ Parija Kavilanz, "Louis Vuitton, Burberry and Chanel put their fashion muscle behind face masks", *CNN Business*, 14 April 2020.

¹⁶ Teo Joyce, "Coronavirus: Singapore scientists on the front lines of fight against Covid-19", *Strait Times*, 25 March 2020.

protective equipment^{17 18}.

This race for supplies also raised the question of the reliability and certification of imported equipment. Upon delivery, a large number of orders turned out not to comply with European standards: for example, the UK paid USD 20 million to a Chinese supplier for tests that didn't work¹⁹ and received 400,000 gowns from Turkey that failed to meet UK standards²⁰. To prevent such occurrences, in some cases the authorities preferred to have certain products held at customs while their reliability was checked: for example, France had a number of mask deliveries held at customs for several days.

Prevention strategy adopted

The prevention strategies defined by each country changed during the course of the epidemic. Preventive measures such as strict border controls, mass testing and contact tracing of the population turned out to be effective means of curbing the spread of the virus. Two major differences emerge between Asian countries, which implemented such measures in light of their experience of the SARS epidemic, and European countries except for Germany. European countries reacted less quickly and then had to apply temporary measures such as lockdown in order to check the rise of the epidemic. Nevertheless, the European countries applied preventive measures such as testing and contact tracing during the post-lockdown phase.

Despite the diversity of situations witnessed in the various countries, a number of leading trends and measures may be identified. A combination of these measures would appear to be a good practice to be applied to tackle a viral epidemic.

Border controls and closures

In the event of an epidemic spreading from a neighbouring country, border controls appear to be a key factor in curbing the spread of the virus. The countries under review adopted a variety of measures ranging from strict controls to total closure of borders, depending on the country's geographical position and the severity of the epidemic.

A total ban on entering the territory was one of the most commonly adopted measures among the Asian countries. From January onwards, Hong Kong, Singapore and Taiwan banned all travellers and residents of mainland China from entering their territory, extending this measure to all non-residents in March due to the increase in the number of cases. In Europe, Schengen area borders were closed on 17 March. Germany, Spain, Italy and France also opted to close their national borders. On the other hand, the UK kept its borders open. Following lockdown exit, the European Union seems to be gradually reopening its borders.

Asian countries also introduced **strict border controls** coupled with preventive procedures such as temperature checks, health declarations filled in by travellers upon arrival and testing at airports for passengers showing symptoms (fever and breathing difficulties). South Korea and Singapore introduced testing at airports (30-minute drive-through procedure in South Korea, special testing rooms in Singapore).

Hong Kong and Germany first introduced compulsory testing for all persons arriving from regions at risk. Subsequently, probable cases were either placed in quarantine or subject to contact tracing of their movements.

It is worth noting that the Asian countries seem to have been better prepared to apply strict border controls: in light of their experience with the SARS, MERS (Middle East Respiratory Syndrome) and H1N1 epidemics, they were already equipped with temperature checking devices (such as forehead thermometers) and testing rooms. The European countries including Italy, Spain and France do not yet seem to have adopted such controls at borders during the post-lockdown period.

Placement of probable cases in quarantine

South Korea, Singapore, Hong Kong and Taiwan imposed a 14-day quarantine on all incoming travellers, residents and

¹⁷ Press release, "[Coronavirus: Commission bid to ensure supply of personal protective equipment for the EU proves successful](#)", European Commission website, 24 March 2020, viewed 9 June 2020.

¹⁸ Patrick Wintour and Daniel Boffey, "UK government accused of cover-up over EU scheme to buy PPE", *The Guardian*, 22 April 2020.

¹⁹ David Kirkpatrick and Jane Bradley, "U.K. Paid \$20 Million for New Coronavirus Tests. They Didn't Work", *The New York Times*, 16 April 2020.

²⁰ Kevin Rawlinson, "Coronavirus PPE: all 400,000 gowns flown from Turkey for NHS fail UK standards", *The Guardian*, 7 May 2020.

nationals returning to the country, cases tested positive and contact cases. Taiwan based its entire strategy for tackling the epidemic on placement in quarantine.

The success of the **quarantine** strategy was based on two factors:

- ▶ The application of dissuasive sanctions in the event of breach of quarantine: Taiwan imposed the harshest sanction in the form of a USD 33,241 fine for breach of quarantine, followed by South Korea (USD 8,257) and Singapore (USD 7,168). South Korea and Singapore also imposed prison sentences (one year and six months respectively) for breach of quarantine²¹.
- ▶ **Tracking compliance with quarantine requirements via a digital device:** digital technology is clearly an effective means of checking the movements of people placed in quarantine. Taiwan has distributed smartphones for tracing movements, while Hong Kong has made it compulsory to wear an electronic bracelet, South Korea locates individuals using the “self-quarantine safety protection” application and Singapore uses GPS data, hotel vigilance and CCTV systems. Taiwan also applies a “name and shame” policy by publishing the names of persons who have breached quarantine²².

Probable cases are now being quarantined in Europe: Italy now requires returning nationals to make a sworn statement saying that they will observe quarantine and to provide their quarantine address. However, in the absence of strict surveillance, this requirement does not seem to have been widely followed for probable cases and returning nationals.

Testing of the population

Regular testing of the population also appears to be a necessary measure for identifying positive cases and breaking infection chains. Not all countries have had the same capacity for carrying out the tests. While the Asian countries quickly developed test kits, Europe except for Germany was slow to set up operational test facilities.

Asian countries such as South Korea, as well as Germany, relied on a **strategy of mass testing of the population** by testing every person showing symptoms or having been in contact with positive cases. South Korea reached a capacity of 20,000 PCR tests per day right from the start of the crisis, while Germany conducted 300,000-500,000 tests per week. The other Asian countries, such as Taiwan and Singapore, have employed less extensive testing strategies but use PCR or serology test kits mostly developed by a PPP. Hong Kong set up four test centres in addition to mobile units for persons in quarantine wishing to be tested.

The success of the test campaigns is based on the establishment of special test centres and the targeting of persons most exposed to the virus. Accordingly, in South Korea around 40 drive-through centres were rapidly set up, enabling Korean citizens to be tested without getting out of their cars. In Germany and the UK, various drive-in locations were set up at hospitals and in car parks, for example. Furthermore, the UK drew on the Asian model by developing a targeted testing strategy. By 1 May, 100,000 swab tests were being conducted per day on persons showing symptoms²³, medical staff, elderly persons and essential workers (transport, etc.).

Spain, Italy and France did not manage to conduct tests at the start of the crisis. Capacity has increased since then: Spain has conducted one million tests since the start of lockdown and Italy was carrying out 29.7 tests per 1,000 people at 26 April, more than in Germany (25.1)²⁴.

Contact tracing of the population

Besides the digital tracking of individuals placed in quarantine, precise **contact tracing** of the population and identification of the contacts of each infected individual enable infection chains to be back-traced.

This strategy is effective where the spread of the virus throughout the territory is controlled - it is primarily based on digital solutions. The Hong Kong Centre for Health Protection conducts full-on inquiries to identify contact cases and persons at risk, by means of electronic bracelets or, for example, CCTV surveillance. Singapore has deployed a Bluetooth application called *Trace Together* in order to trace probable cases. South Korea has applied the most intrusive policies in terms of contact tracing by controlling smartphone and bank data.

²¹ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

²² Ibid.

²³ Cabinet Office Briefing Room, “Covid-19 press conference”, 3 May 2020.

²⁴ Alexandre Robinet-Borgomano, “Les états face au coronavirus - L'archétype italien”, *Blog de l'Institut Montaigne*, 29 April 2020, viewed 7 May 2020.

The European countries are also planning to implement similar measures, such as the *StopCOVID* application in France (launched on 2 June 2020)²⁵ and the *Immuni* application developed by Bending Spoons in Italy.

From social distancing to total lockdown

All barrier strategies implemented in response to the COVID-19 epidemic involved **strict social distancing measures** aimed at curbing the spread of the virus among individuals. All of the many different preventive measures applied, including closure of public gathering places and schools, total or partial lockdown, etc., involved **restrictions on individual movements and freedoms**. Total lockdown was the most drastic measure adopted and became a necessity when the aforementioned measures were no longer effective and the epidemic had spiralled out of control.

Countries such as South Korea, Hong Kong and Germany managed to avoid imposing a lockdown by closing gathering places and schools and urging the population to stay at home as far as possible. Nevertheless, these countries applied different measures: South Korea never closed down shops, whereas Germany banned all gatherings of more than two people.

In Europe, Italy was the first country to impose general lockdown: while the northern regions hardest hit by the crisis were placed under lockdown on 8 March, lockdown was extended to the rest of the country on 10 March. Spain and France followed suit by imposing general lockdown on 14 and 17 March respectively.

Singapore and the UK are examples of countries that initially chose not to impose lockdown but were subsequently forced to do so in view of the progress of the epidemic. While Singapore opted for self-disciplinary measures by urging the population to stay at home as far as possible (publication of a *Stay-Home Notice* on 18 February), it was forced to impose lockdown on 3 April in view of an increase in cases among migrant workers. The UK, on the other hand, opted for a herd immunity strategy but was forced to impose lockdown on 23 March.

Deployment of healthcare facilities

The Asian countries and Germany managed to limit the saturation of the healthcare system through “effective” prevention of contagion.

After the experience of the SARS epidemic in 2003-2004, the combination of preventive measures adopted by the Asian countries (border controls, strict quarantine, mass testing strategy, detailed contact tracing) proved an **effective means of curbing the spread of the virus and, as a result, slowing and reducing the influx of patients into hospitals, thereby limiting the risk of saturating the hospital system. Accordingly, these countries did not experience critical situations at hospitals.**

In Hong Kong, the health service was not saturated and no hospital staff member was infected²⁶. The Singapore health service also remained intact despite the mid-March “second wave” of infection²⁷. In South Korea, the hospital system was overloaded only for a brief period in the city of Daegu, where all cases were concentrated.

Hospitals in Taiwan had time to prepare for the arrival of infected persons and plan the streamlining of patient movements (e.g. ensure the isolation of infected patients in the event of a spike in the number of cases). Taiwan had 943 beds in isolation negative-pressure wards (of which only 47% were occupied at the beginning of March²⁸) and the Taiwanese authorities announced that this isolation capacity could be increased if necessary, for example by adapting ward layout. Accordingly, in mid-March Taiwan was in a position to face the infection wave²⁹.

Germany succeeded in identifying and isolating virus carriers through swift and early deployment of mass testing, thereby slowing the spread of the virus while giving the health service time to expand its capacity³⁰. German hospitals were never saturated and, from 23 March 2020, were able to take in COVID-19 patients from other European countries

²⁵ “StopCOVID”, French Economy Ministry portal, updated at 2 June 2020.

²⁶ Le Monde, “A Hongkong, la prise en charge au plus tôt des malades a permis d’éviter la crise sanitaire”

²⁷ Yeh Woei Chong, “Covid-19: la méthode singapourienne expliquée par l’un des médecins en chef de la cité Etat”, *Atlantico*, 15 April 2020.

²⁸ Institut Montaigne, Covid-19: l’Asie orientale face à la pandémie, April 2020.

²⁹ Jean-Marc Egly, “Prévision, réactivité... Pourquoi Taïwan a si bien su gérer la crise sanitaire”, *Le Figaro*, 11 May 2020.

³⁰ Alexandre Robinet-Borgomano, “Les Etats face au coronavirus - L’Allemagne, un modèle résilient”, *Blog de l’Institut Montaigne*, 8 April 2020.

(France and Italy).

Meanwhile, the other European countries (Italy, Spain, France and the UK) experienced critical situations, including saturation at some hospitals and a chronic shortage of medical equipment and PPE for medical staff. Despite the robustness of the Italian health service in the regions hit hardest, the country was unable to flatten the infection curve sufficiently, leading to saturation at hospitals and an acceleration of the death toll. In Spain, the early March wave of infections led to rapid saturation of the health service in some regions³¹, thereby accelerating the death toll due to COVID-19. Faced with a mass influx of patients, due to the shortage of equipment and trained staff to deal with the situation, the health services of both countries were faced with the terrible dilemma having to establish an order of priority for patients to be treated³². Spanish medical staff are also among the most affected in Europe, accounting for around 14% of total COVID-19 infections³³. The UK also suffered a chronic shortage of equipment, particularly for medical staff (gowns)³⁴. In France, hospitals in the most affected regions experienced critical situations due to the lack of critical care beds and shortage of masks and PPE³⁵.

Strong capacity for adaptation among health services during the crisis

During a crisis, the number of beds is not the only determining factor with regard to medical response, firstly because the regions hit hardest by COVID-19 were not necessarily the poorest equipped. **The determining factor during this period is the health service's capacity for adaptation.**

Both European and Asian countries showed a remarkable capacity for adaptation, as illustrated by the reorganisation of hospital services. Accordingly, the UK made considerable efforts to increase its intake capacity by freeing up 33,000 beds (i.e. one third of the total number of beds in the UK health service and the equivalent of 50 hospitals, including 10,000 critical care beds³⁶) and developing temporary hospitals.

By the end of April, this exceptional system had only taken in a handful of COVID-19 patients and the capacity of beds freed by the NHS was far from being saturated. In Spain, as soon as the state of emergency was declared, all civil and military medical resources (public and private sector) were harnessed to tackle the pandemic and a number of field hospitals were built, such as Madrid's exhibition centre transformed into a field hospital. In France, a military hospital annex was installed in Mulhouse towards the end of March. Italy also launched a drive to create new beds, mainly funded by private donations: the Fiera di Milano hospital containing 53 critical care beds was built in 10 days and inaugurated on 1 April. Lastly, Germany also managed to rapidly increase its capacity to 40,000 critical care beds including 30,000 fitted with ventilators at the start of April³⁷. The country was able to count on strong domestic capacity and expertise, as two German companies, Dräger and Löwenstein, are among the leading global manufacturers of artificial respiration ventilators.

The Asian countries also demonstrated their ability to bolster existing healthcare structures during the crisis. For example, Hong Kong organised 1,200 isolation beds for confirmed COVID-19 cases (only 30% occupied at 3 April 2020). The city has also set itself the target of converting a number of public hospital spaces into isolation wards in order to provide 500 extra beds³⁸. Holiday camps have also been used to quarantine confirmed cases.

In view of the risk of saturation among hospitals in the most affected regions, France, Italy and Spain also organised patient transfers between regions and to other less affected European countries. In France, these transfers were mainly carried out by medicalised TGV high-speed trains backed up by strong support from the Ministry of the Armed Forces. In Spain, the most severely affected autonomous communities criticised central government for its inability to transfer

³¹ Cécile Thibaud, "Coronavirus: A Madrid, les unités de soins intensifs sont complètement saturées", *Les Echos*, 1 April 2020.

³² "Épidémie de coronavirus : de l'Italie à la France, l'inquiétude monte sur la capacité de réponse dans des hôpitaux saturés et sous-dotés", *France Culture*, 11 March 2020.

Elena G. Sevillano, "Las UCI darán prioridad a los enfermos que tengan más esperanza de vida si se colapsan", *El País*, 20 March 2020.

³³ Cécile Thibaud, "Coronavirus: A Madrid, les unités de soins intensifs sont complètement saturées", *Les Echos*, 1 April 2020.

³⁴ D. Campbell, "NHS staff told 'wear aprons' as protective gowns run out", *The Guardian*, 17 April 2020.

³⁵ Alexandre Robinet-Borgomano, "Les Etats face au coronavirus - La France: crise sanitaire et crise de confiance", *Blog de l'Institut Montaigne*, 11 May 2020.

³⁶ Institut Montaigne, "Les Etats face au coronavirus: le Royaume-Uni, un laissez-faire coûteux", 28 April 2020

³⁷ Stanislas Vasak, "Y a-t-il un modèle allemand dans la lutte contre le coronavirus?", *France Culture*, 3 April 2020.

³⁸ "Hospitals to set up hundreds more isolation beds", *RTHK*, 4 March 2020.

patients to hospitals in less affected regions³⁹.

In France, while a regional pooling system was set up in response to the crisis, cooperation between public and private sector facilities proved less easy to set up right at the start of the crisis, as private facilities that had reorganised their services in accordance with government instructions took in no patients while neighbouring hospitals were clearly overstretched⁴⁰.

Lastly, Germany and the Venice region in Italy exemplified the major role played by general practitioners and the importance of cooperation between them and the hospital system in tackling the epidemic. In Italy, unlike Lombardy where contagion was exacerbated due to the lack of preparedness among small hospitals, the Venice region tried to limit hospital admissions by prioritising home care, which partly explains this region's success in dealing with the crisis⁴¹. In Germany, COVID-19 patients were largely treated by general practitioners (6 out of 7 patients), allowing hospitals to focus on the most severe cases. On the other hand, France could be criticised for the lack of instructions issued to general practitioners and labs⁴².

Resilience is the art of navigating through the torrents⁴³

"What this pandemic has shown is that there are goods and services that must be placed outside the laws of the market. Delegating our food, protection and ability to look after the fundamental needs of our way of life to others is madness. We need to regain control..."⁴⁴

³⁹ Alexandre Robinet-Borgomano, "Les Etats face au coronavirus - L'Espagne, une guerre sans bombe", *Blog de l'Institut Montaigne*, 27 April 2020.

⁴⁰ Philippe François and Sandrine Gorreri, "Crise sanitaire: tout ne se résume pas au nombre de lits d'hôpitaux", *Fondation IFRAP*, 25 April 2020.

⁴¹ Alexandre Robinet-Borgomano, "Les états face au coronavirus - L'archétype italien", *Blog de l'Institut Montaigne*, 29 April 2020, viewed 7 May 2020.

⁴² Philippe François and Sandrine Gorreri, "Crise sanitaire: tout ne se résume pas au nombre de lits d'hôpitaux", *Fondation IFRAP*, 25 April 2020.

⁴³ Boris Cyrulnik, French doctor, ethologist, neurologist and psychiatrist

⁴⁴ Emmanuel Macron, President of the French Republic, speech on 12 March 2020

Individual country profiles

3



France

Key figures

Indicators	2020 data
Population	66.9 ⁴⁵ million.
Proportion of population aged over 65.	19.84%.
Pre-crisis healthcare budget (% GDP)	11.2%.
Number of critical care beds per 100,000 inhabitants	16.3
Mask stockpile	150 million surgical masks at the start of the crisis.
Start of epidemic (first case)	24 January 2020. ⁴⁶
Time lag (days) between first infection and first barrier measures	30 days - 4-stage response plan launched on 23 February by health minister Olivier Véran with the triggering of stage 1 aimed at slowing the onset of the virus.
Border closure	Yes.
Testing strategy	Plan to conduct 700,000 tests per week from the start of May (difficult to verify) - 1,500 drive-through tests.
Lockdown strategy	Total lockdown imposed on 17 March: movements authorised with certificate.
Compulsory wearing of masks	No.
Support plan budget (% GDP)	11.2%.

Key takeaways

1. Relatively slow initial spread and later response than in other countries

Infections in France followed a flatter exponential curve than in neighbouring countries⁴⁷. However, initial measures were implemented later: 30 days after the appearance of the first case and 16 days after reaching the 100 case mark, compared to 12 days in Spain and 14 in Italy.

⁴⁵ OECD, 2018 data

⁴⁶ "Coronavirus: un troisième cas d'infection confirmé en France", *Le Monde*, 24 January 2020.

⁴⁷ Victor Poirier and Gauthier Simon, "Les Etats face au coronavirus - La France: crise sanitaire et crise de confiance", *Blog de l'Institut Montaigne*, 11 May 2020.

2. Lack of logistics preparedness and strong dependence on imports

The shortage of PPE became a reality as early as March, a fact condemned by a number of bodies including the French private hospital federation (FHP) in a press release dated 22 March 2020⁴⁸, whereas only a few weeks earlier health minister Olivier Véran had announced the release of several million surgical masks⁴⁹ for elderly care homes and general practitioners. This shortage was mainly due to the depletion of strategic face mask stockpiles established at the time of the H1N1 epidemic: the stockpile fell from 1.7 billion in 2009 (1 billion surgical masks and 723 million FFP2 masks) to 150 million surgical masks at the start of the COVID-19 epidemic⁵⁰. Failure to replenish these stockpiles was due to a change of tack by the Secretariat-General for National Defence and Security (SGDSN), which has considered since 2013 that the building of stockpiles of protective masks for medical practitioners (particularly FFP2 masks) was the responsibility of employers⁵¹, thereby transferring responsibility for establishing these stockpiles to healthcare and medical welfare facilities⁵². To palliate the shortage of PPE, hydroalcoholic gel and ventilators, major French companies quickly galvanised their resources to contribute to the national endeavour by harnessing their manufacturing facilities: Air Liquide Medical Systems, the sole manufacturer of ventilators in France, worked with Renault, Michelin and ST Microelectronics⁵³ to increase production volumes, while LVMH adapted its fragrance plants in order to produce hydroalcoholic gel. Notwithstanding these efforts, China continued to be the main source of supplies and a fully-fledged air bridge was established in mid-March⁵⁴.

Hospitals are also encountering problems with the supply of drugs, particularly anaesthetics and antibiotics which are used extensively in intensive care wards⁵⁵, as the COVID-19 epidemic has severely disrupted the supply chains for these drugs, many of which are produced overseas. Accordingly, pursuant to a decree dated 27 April 2020 the government took control of procurement and distribution of a number of molecules.

Besides the shortage of equipment, criticism was also directed at the organisation of distribution by the authorities: the FHP⁵⁶ lambasted an inefficient distribution system based on the GHT regional hospital trusts for the distribution of masks to all healthcare facilities.

3. Unprecedented deployment of resources centred on the health service and public hospitals coupled with insufficient use of private care solutions

The health authorities had to swiftly organise the ramp-up in intensive care ward capacity, which rose from 5,000 to 14,000 beds, i.e. an extra 9,000 critical care beds added in only a few weeks⁵⁷. This capacity increase was made possible by the combination of anaesthetist and intensive care duties and the addition of nurses specialising in anaesthetics and recovery room care⁵⁸. The opening of a field hospital in Mulhouse on 21 March with 30 intensive care units and a staff of around 100⁵⁹ helped increase the intensive care capacity of the Grand Est region, which was particularly hard hit by the virus. The army also stepped in to transfer patients from the areas most affected to less affected regions, evacuating patients from the Grand Est region from 18 March onwards⁶⁰.

⁴⁸ "Covid-19 - Etablissements privés et praticiens libéraux: Faites appel à nous!", *French private hospital federation press release*, 22 March 2020.

⁴⁹ "Coronavirus: Véran annonce le déstockage de 15 à 20 millions de masques supplémentaires", *Le HuffPost*, 3 March 2020.

⁵⁰ Cédric Stanghellini, "Comment la France est passée d'un stock d'Etat de 723 millions de masques FFP2 à la pénurie", *LCI*, 21 March 2020.

⁵¹ Fabien Magnenou, "Coronavirus: pourquoi la France manqué-t-elle de masques de protection respiratoire?", *Franceinfo*, 19 March 2020.

⁵² *Ibid.*

⁵³ Eric Bergerolle, "Covid-19: comment les constructeurs auto se reconvertissent dans les respirateurs", *Challenges*, 31 March 2020.

⁵⁴ Franck Bouaziz and Marc Chaumeil, "Approvisionnement en masques: dans les coulisses du pont aérien", *Libération*, 1 May 2020.

⁵⁵ "Coronavirus: Des médecins s'alarment face à une potentielle pénurie d'anesthésiants", *CNews*, 14 May 2020.

⁵⁶ "Covid-19 - Etablissements privés et praticiens libéraux: Faites appel à nous!", *French private hospital federation press release*, 22 March 2020.

⁵⁷ Delphine Chayet, "Coronavirus: les prouesses des lits de réanimation éphémères", *Le Figaro*, 18 May 2020.

⁵⁸ *Ibid.*

⁵⁹ "Coronavirus: l'hôpital de campagne militaire à Mulhouse est en cours de montage", *Le Figaro*, 21 March 2020.

⁶⁰ Nicolas Barotte, "Première évacuation militaire de malades du coronavirus", *Le Figaro*, 18 March 2020.

From 26 March, additional transfers were carried out by medicalised TGV high-speed trains⁶¹. On the other hand, private healthcare providers criticised the lack of demand for their services even in the most affected regions, as stated by FHP president Lamine Gharbi in a press release published on 22 March 2020 entitled "COVID-19 private facilities and freelance practitioners: 'Ask us for help!'"⁶².

4. Testing capacities deployed more slowly in other countries

France suffered from its relative tardiness in deploying test capacities, performing only 35,000-85,000 tests per week by the end of March and opting not to test benign forms of COVID-19⁶³. This situation lasted until early May, as, according to OECD statistics dated 4 May 2020⁶⁴, France was carrying out 11.1 tests per 1,000 inhabitants, well below the OECD average of 27.7 tests per 1,000 inhabitants and the number of tests carried out in Spain (28.9/1,000 inhab.), Germany (30.4/1,000 inhab.) and Italy (34.9/1,000 inhab.). The government announced its plan to test 700,000 people per week from 11 May, at the beginning of lockdown exit, and considerably expanded test capacity, primarily by setting up over 1,500 drive-through test locations⁶⁵. However, it appears to be difficult to assess the extent to which targets have been met given the lack of an information system recording exhaustively the number of tests conducted in the various type of lab (hospital labs, private medical biology labs, public research units, veterinary labs)⁶⁶.

5. General lockdown followed by a gradual lockdown exit phase

The closure of schools and universities was announced on 12 March. In the evening of Saturday 14 March, the Prime Minister announced the closure of bars, cafés and restaurants and a ban on gatherings. Lastly, on 16 March the French President announced a total lockdown from 17 March and the restriction of movements outside the home to the bare minimum. This general lockdown strategy seems to have paid off, as the health situation was improving at the time France entered the post-lockdown phase on 11 May: the balance of patients admitted to hospital for COVID-19 was negative from 9 April onwards (i.e. the number of COVID-19 patients discharged from hospital every day exceeded the number of patients admitted to hospital for COVID-19⁶⁷). Lockdown measures coincided with the decision to close the French borders, a measure that supplemented the closure of Schengen area borders effective 17 March.

6. Unprecedented plan to support the economy in order to save jobs and protect businesses from bankruptcy

Measures to support the economy were adopted before the announcement of lockdown. The total budget of the emergency plan for the economy implemented by the government represented 5% of GDP, or €110 billion, together with €315 billion of state-guaranteed bank loans. On 12 March 2020, Emmanuel Macron announced the introduction of an exceptional, mass-scale furlough scheme for businesses with the government paying compensation for employees forced to stay at home in order to preserve their jobs⁶⁸. 12.9 million employees were covered by this scheme in France from March to May 2020⁶⁹. The government also guaranteed loans granted to businesses in order to facilitate their access to cash and attempt to limit the number of bankruptcies: €57 billion in state-guaranteed loans were accordingly granted to 350,000 businesses between 25 March and the beginning of May 2020. In addition to these loans, social security charges and tax payments were deferred.

⁶¹ "TGV médicalisé: l'évacuation des patients est en cours", *Le Parisien*, 26 March 2020.

⁶² "Covid-19 - Etablissements privés et praticiens libéraux: Faites appel à nous!", *French private hospital federation press release*, 22 March 2020.

⁶³ Victor Poirier and Gauthier Simon, "Les Etats face au coronavirus - La France: crise sanitaire et crise de confiance", *Blog de l'Institut Montaigne*, 11 May 2020.

⁶⁴ OECD, Testing for COVID-19: A way to lift lockdown restrictions, 4 May 2020.

⁶⁵ "Covid-19: plus de 1500 drive tests de dépistage en France", *Franceinfo*, 4 June 2020.

⁶⁶ Gary Dagorn and Léa Sanchez, "Coronavirus: le difficile comptage des tests effectués en France", *Le Monde*, 15 May 2020.

⁶⁷ Victor Poirier and Gauthier Simon, "Les Etats face au coronavirus - La France: crise sanitaire et crise de confiance", *Blog de l'Institut Montaigne*, 11 May 2020.

⁶⁸ "Adresse aux Français, 12 mars 2020", *www.elysee.fr*, 12 March 2020, viewed 9 June 2020.

⁶⁹ William Plummer, "12,9 millions de personnes ont été couvertes par le chômage partiel en France", *Le Figaro*, 27 May 2020.

7. A crisis that exacerbated mistrust of the government and discontentment with slow administrative procedures

The management of the mask stockpile typified the issues that contributed towards eroding French confidence in the government and its institutions. The depletion of strategic stockpiles of protective masks and supply delays experienced at the beginning of the crisis undoubtedly contributed towards eroding confidence in the way the crisis was being handled.

8. COVID-19 crisis management also highlighted the slowness of a number of administrative procedures

An inquiry by France Info published on 20 May 2020 and entitled "How administrative rigidity and sloth hampered French management of the COVID-19 crisis"⁷⁰ notably highlighted how slow procedures delayed the enlisting of public research units, regional laboratories and veterinary labs to carry out screening tests, due to a problem relating to "regulatory standards". Jean-Louis Hunault, president of the French veterinary drug and reagent industry federation (SIMV), says that he tried unsuccessfully to contact the central health department (DGS) and that it took several weeks to escalate the information that its members wished to carry out the tests.

Luc Rouban, head of research at CNRS and an expert in the civil service, pinpointed a problem with the dispersion of authority, which explains slow decision-making processes at a time when the crisis required a rapid response: *"The ARS regional health authorities look after the hospitals but not the medical welfare sector, which is managed by the 'départements'; the Prefects implement public policy measures but have no authority over the ARS; and while mayors hold general authority, the Health Emergency Act passed the reins back to the government"*⁷¹.

Timeline of major milestones in crisis management

1) January-March: Outbreak of epidemic and initial measures

- ▶ **24 January:** First three confirmed coronavirus cases in France.
- ▶ **17-24 February:** At an evangelic gathering in Mulhouse attended by over 2,000 people from all over France, over 1,000 people were infected, thereby spreading the epidemic over the entire country⁷².
- ▶ **24 February:** Launch of phase 1 of response plan aimed at curbing the spread of the virus.
- ▶ **28 February:** Launch of phase 2 of the response plan aimed at curbing the spread of the virus throughout France, notably by banning gatherings of over 5,000 people in a confined space.
- ▶ **5 March:** 1st case of COVID-19 among the French parliament.

2) March-April: Acceleration of epidemic and birthpangs of crisis management

- ▶ **11 March:** Creation of an ad hoc scientific committee at the health ministry, chaired by Jean-François Delfraissy and comprising 10 other experts.
- ▶ **12 March:** Announcement of closure of schools but maintenance of first round of municipal elections scheduled on 15 March; announcement of universal application of the furlough scheme and deferred payment of social security charges and taxes⁷³.
- ▶ **14 March:** The Prime Minister announced the closure of cafés, restaurants, bars and other meeting places - launch of phase 3.
- ▶ **17 March:** Beginning of lockdown announced the previous day in a speech by Emmanuel Macron.
- ▶ **18 March:** First patients evacuated by air by the army as part of "Operation Morpheus".
- ▶ **21 March:** Opening of field hospital in Mulhouse with 30 intensive care beds and around 100 medical workers.
- ▶ **26 March:** Initial transfers of patients by medicalised TGV high-speed trains.

⁷⁰ Margaux Duguet, "Enquête Franceinfo. Comment la rigidité et les lenteurs de l'administration ont plombé la gestion française de la crise du Covid-19", *Franceinfo*, 21 May 2020.

⁷¹ Ibid.

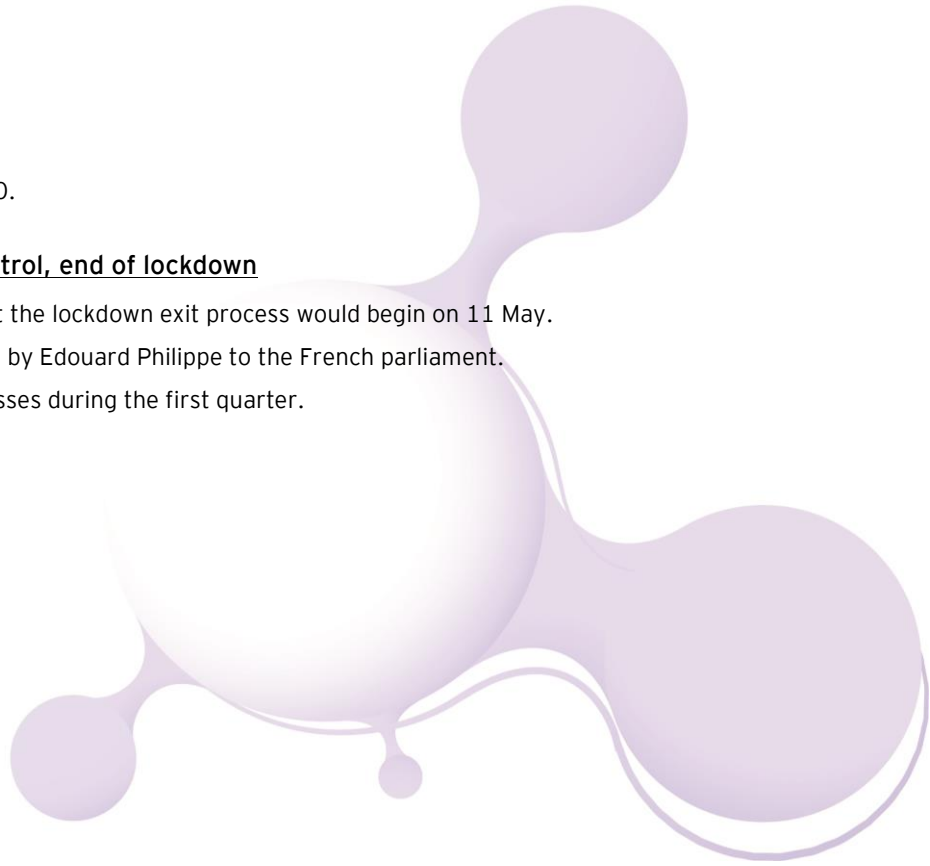
⁷² "Enquête Franceinfo. La majorité des personnes étaient contaminées : de la Corse à l'outre-mer, comment le rassemblement évangélique de Mulhouse a diffusé le coronavirus dans toute la France", *Franceinfo*, 30 March 2020.

⁷³ "Adresse aux Français, 12 mars 2020", www.elysee.fr, 12 March 2020, viewed 9 June 2020.

- ▶ **7 April:** COVID-19 death toll reaches 10,000.

3) April-May: Epidemic brought under control, end of lockdown

- ▶ **13 April:** Emmanuel Macron announced that the lockdown exit process would begin on 11 May.
- ▶ **28 April:** Presentation of lockdown exit plan by Edouard Philippe to the French parliament.
- ▶ **7 May:** Insee announces 453,800 net job losses during the first quarter.
- ▶ **11 May:** Beginning of post-lockdown phase.





Spain

Key figures

Indicators	2020 data
Population	46.7 million. ⁷⁴
Proportion of population aged over 65	19.29%. ⁷⁵
Pre-crisis healthcare budget	8.9% of GDP.
Number of critical care beds	9.7 per 100,000 inhabitants. ⁷⁶
Pre-crisis mask stockpile	Insufficient
Start of epidemic (first case)	31 January 2020.
Time lag (days) between first infection and first barrier measures	39 days: initial measures taken on 10 March 2020.
Border closure	Yes, from 16 March 2020
Testing strategy	Testing was rolled out gradually after the start of lockdown (1 million tests carried out since the start of lockdown).
Lockdown strategy	Yes, total lockdown until 9 May
Compulsory wearing of masks	Yes, from 4 May on public transport. Previously, wearing of masks was only highly recommended.
Support plan budget (% GDP)	10.7% of GDP (total €132.8bn including €30bn budget measures and €102.8bn guarantees).

Key takeaways

1. Health service fragmented and weakened after the 2008 economic crisis⁷⁷

While Spain has a National Ministry of Health, the governance system places health policies under the responsibility of the autonomous communities. Furthermore, the 2008 economic crisis led to the privatisation of a large number of healthcare facilities, a reduction in number of beds (298 per 100,000 inhab. in 2015 versus 368 in 2000⁷⁸) and a major exodus of doctors abroad⁷⁹. Investment in the healthcare sector decided by the government over the last few years has not been a priority: investment accounted for only 1.3% of healthcare expenditure in 2014 versus 3.1% in 2010⁸⁰.

⁷⁴ OECD, 2018.

⁷⁵ OECD data, 2018.

⁷⁶ OECD, Beyond Containment: Health systems responses to COVID-19 in the OECD, April 2020.

⁷⁷ CLEISS - Centre des liaisons européennes et internationales de sécurité sociale, "Le Système de santé espagnol", April 2020.

⁷⁸ European Observatory on Health Systems and Policies, *Spain Health System Review*, 2018

⁷⁹ Ibid.

⁸⁰ Ibid.

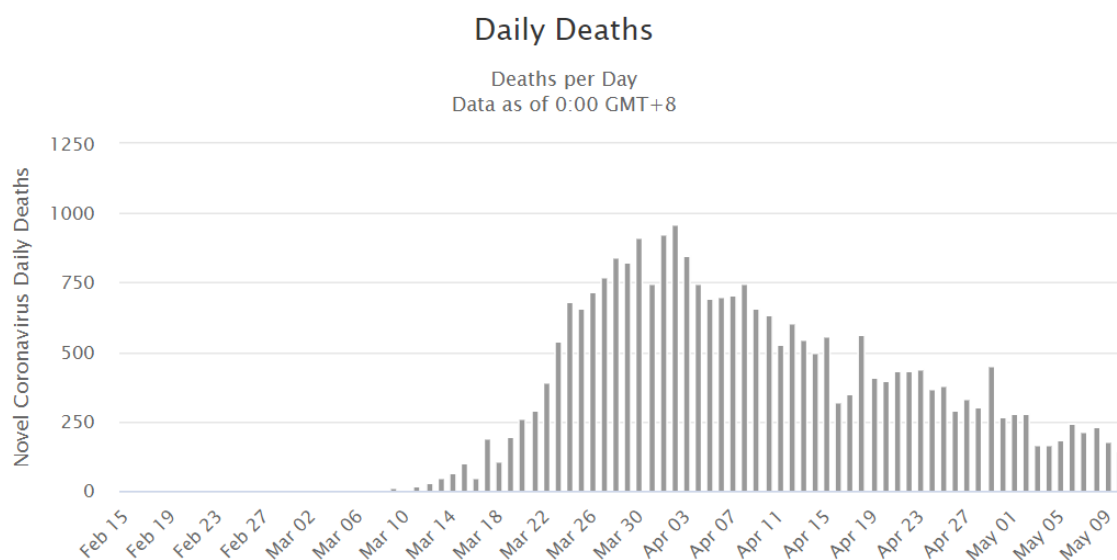
At a time when hospitals were under the greatest pressure, testimonies condemned shortages of PPE for medical staff, who were sometimes forced to use bin liners to protect themselves⁸¹. Some hospitals also had to make internal adjustments to cope with the influx of patients: for example, the largest hospital in the Community of Madrid, also the third largest in the country, increased its hospital bed count from 1,349 to 1,565⁸².

2. Strong criticism of the existing government and the impossibility of obtaining national unity⁸³ during the crisis

Management of the COVID-19 crisis required centralised action on the part of the government entailing new involvement by the State. This involvement by central government was denounced by the Spanish provinces, particularly with regard to the procurement of medical equipment and fair distribution thereof. The government of Pedro Sánchez did not benefit from the “national unity” seen in other countries but, on the contrary, was widely criticised by the opposition parties, who condemned in particular the lack of consultation about decisions taken.

3. Tardy measures to contain the spread of the epidemic

Although the first case of COVID-19 in Spain was diagnosed on 31 January, the first announcements and measures designed to tackle the epidemic came only on 10 March, i.e. 39 days later. On 9 February, Dr Fernando Simón, head of the health ministry’s health warning and emergency centre, said that Spain would only encounter a few cases of coronavirus⁸⁴. On 8 March, only a week after the start of lockdown, sports events, political party conferences and demonstrations assembling 5 million people for international women’s day were maintained in the country. The first measures were implemented from 10 March with the first statement by the Prime Minister, followed by the decision to impose lockdown on 14 March and to close borders on 16 March⁸⁵.



Source: Worldometer website - Spain - Last view: 11/05/2020

⁸¹ Clara Nugent, “It’s like being a war medic.’ A Madrid doctor speaks out about grave shortages in protective gear”, *Time*, 25 March 2020.

⁸² Isabel Valdés, “El ‘milagro Marañón’ o la multiplicación de las camas y las UCI”, *El País*, 27 April 2020.

⁸³ Robert Schuman Foundation, *The Political Management of the COVID-19 Crisis in Spain*, April 2020.

⁸⁴ Giles Tremlett, “How did Spain get its coronavirus response so wrong?”, *The Guardian*, 26 March 2020.

⁸⁵ Alexandre Robinet-Borgomano, “Les Etats face au coronavirus - L’Espagne: une guerre sans bombe”, *Blog de l’Institut Montaigne*, 27 April 2020.

4. Shortages of PPE due to limited production capacity and lack of centralised procurement policy

Spain was soon faced with a shortage of masks, mainly due to the virtual absence of mask production capacity in the country with only one production company identified in Spain. From April, Bexen Medical, a firm based in the Basque country, started to produce 10 million masks per month in order to palliate the shortage⁸⁶. Accordingly, the country soon fell victim to the global shortage of masks and the rationing imposed at customs posts. This was exacerbated by the Spanish health service's decentralised governance and the lack of centralised procurement policy over the previous years. This situation made it impossible for Spain to properly anticipate a pandemic of this nature, despite the fact that at the beginning of 2020 the government introduced a centralised policy for masks and ventilators.

5. Unprecedented budget relaunch

The Spanish government adopted a series of measures to support businesses and individuals⁸⁷. To help businesses, the government simplified the procedure for setting up furlough schemes, provided wage subsidies to help avoid layoffs (€3.4 billion) and deferred the filing of a number of different tax returns for SMEs and self-employed persons (€14 billion). The government guaranteed €100 billion of loans to businesses via the ICO state-owned bank and provided guarantees worth €0.4 billion to the tourism sector, also via ICO, and €2 billion to SME exporters via the CESCE (equivalent to BPI France Crédit Export). Funds totalling €3.4 billion were also transferred to the autonomous communities. The government released €600 million to enable the autonomous communities to shore up their social services and €25 million to combat child poverty, banned closures of water supply and telephone lines while suspending loan repayments for 3 months, and guaranteed €400 million for tenants at risk via ICO. Lastly, a €4.6 billion subsidy was provided to the healthcare sector while €30 million was allocated to vaccine research.

Timeline of major milestones in the crisis

1) End January-March: Appearance of virus and initial measures

- ▶ **31 January:** First case of COVID-19 in Spain: a German tourist.
- ▶ **4 February:** Creation of an inter-ministerial coronavirus committee.
- ▶ **13 February:** First death from COVID-19, man returning from a foreign trip.
- ▶ **19 February:** Football match in Milan attended by 40,000 fans of Atalanta Bergamo (Italy) and 2,500 Valencia fans. The mayor of Bergamo described the match as a "bomb" that triggered numerous infections in Lombardy.
- ▶ **25 February:** Official start of testing campaign and first cases detected in Madrid, Barcelona and Castellón.
- ▶ **10 March:** Speech by the Prime Minister; Madrid, the Basque country and Catalonia announce the closure of nurseries, schools, universities and cultural establishments; the government suspends incoming flights from Italy and urges the most affected regions to introduce social distancing measures.
- ▶ **12 March:** Closure of schools.
- ▶ **13 March:** Spain tallies 5,200 confirmed cases compared to 500 on 7 March.

2) March-April: Lockdown and economic slowdown

- ▶ **14 March:** The government declares a state of emergency leading to the centralisation of decisions regarding healthcare and policing; movements are reduced to the bare minimum, demonstrations banned and shops forced to close.
- ▶ **16 March:** Closure of land borders with neighbouring countries⁸⁸.
- ▶ **17 March:** Announcement of a €200 billion plan by Pedro Sánchez.
- ▶ **21 March:** Creation of a scientific and technical coronavirus committee.
- ▶ **28 March:** Suspension of all non-essential economic activity.
- ▶ **29 March:** Establishment of an air bridge with China for supplies of equipment.

⁸⁶ Mikel Ormazabal, "Diez millones de mascarillas hechas en España al mes", *El País*, 18 April 2020.

⁸⁷ "Espagne - COVID-19: Mesures économiques", French Treasury Department website, viewed 11 May 2020.

⁸⁸ Amandine Alexandre, Lilia Blaise, Nicolas Cheviron, Cécile Debarge, Rachida El Azzouzi, Corentin Léotard, Frédéric Ojardias, Thomas Schnee, Côme Bastin, Alexis Buisson, François Hume-Ferkatadji, Vianey Lorin, Olivia Macadré and Salomé Parent-Rachdi, "Un tour du monde du déconfinement", *Mediapart*, 10 May 2020.

- ▶ **14 April:** The IMF forecasts an 8% recession for Spain.
- ▶ **20 April:** The ECB forecasts a GDP decline of between 6.6% and 13.6% (variable depending on the date of lockdown exit) due to the pandemic⁸⁹.
- ▶ **23 April:** Spain's death toll reaches 22,000⁹⁰.

3) End April-June: Easing of measures

- ▶ **26 April:** Children are authorised to leave the house for the first time since 14 March.
- ▶ **4 May:** Initiation of lockdown exit in 4 phases, with return to normal forecast for the end of June and compulsory wearing of masks on public transport.
- ▶ **16 June:** Second week in a row during which the number of COVID-19 cases increase in Spain, with 1,751 confirmed cases over the last 7 days⁹¹.

⁸⁹ Ibid.

⁹⁰ Ibid.

⁹¹ Emilio de Benito, "Spain reports second consecutive rise in weekly coronavirus cases", *El País*, 16 June 2020.



Key figures

Indicators	2020 data
Population	5.64 million. ⁹²
Proportion of population aged over 65	11.8%. ⁹³
Pre-crisis healthcare budget	4.5% of GDP. ⁹⁴
Number of critical care beds	11.7 per 100,000 inhabitants. ⁹⁵
Pre-crisis mask stockpile	High - In September 2019, the Singapore government had a stockpile of 16 millions N95 masks, i.e. around 3 masks per inhabitant. ⁹⁶
Start of epidemic (first case)	23 January 2020. ⁹⁷
Time lag (days) between first infection and first barrier measures	21 days before the first infection.
Border closure	Yes from 1 February for travellers arriving from China and from 22 March for all travellers arriving for a short stay.
Testing strategy	Yes, swab tests at airports for travellers arriving in Singapore By 12 May, Singapore had conducted 3,900 tests per 100,000 inhabitants, one of the highest rates in the world ⁹⁸ .
Lockdown strategy	Yes from 3 April - extended to 1 June on 21 April.
Compulsory wearing of masks	Yes from 14 April.
Support plan budget (% GDP)	11% of GDP ⁹⁹ .

Key takeaways

The centralisation of executive decisions by the Ministry of Health and the use of existing institutions set up in the wake of the SARS epidemic in 2003 (National Centre for Infectious Diseases, National Public Health Laboratory, quarantine centres, etc.) enabled the country to implement **a very early response with a powerful impact**. Accordingly, response measures were enacted 21 days before the first case was detected in Singapore, including:

- ▶ Systematic quarantining of infected patients;
- ▶ Entry restrictions for travellers;
- ▶ Swab tests on suspect passengers at airports;
- ▶ Intrusive contact tracing of the population;

⁹² World Bank data, 2018.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Jason Phua et al., "Critical Care Bed Capacity in Asian Countries and Regions", *Critical Care Medicine*, January 2020.

⁹⁶ "16 million N95 masks available in national stockpile as haze covers Singapore". *Today Online*, 19 September 2019.

⁹⁷ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

⁹⁸ "[Controlling the outbreak, preparing for the next phase](#)", Ministry of Health website, 12 May 2020.

⁹⁹ Ibid.

- ▶ Revival of the Public Health Preparedness Clinics set up during the SARS epidemic.

1. Highly strict border controls

Singapore closed its borders to citizens of Hubei province on 29 January and to all short-term visitors on 22 March. Furthermore, swab tests were carried out in special testing rooms in airports. On 21 March, a compulsory 14-day quarantine was imposed on anyone entering the country. Accordingly, special quarantine centres were set up.

2. Intrusive contact tracing of the population's movements as the key to the Singaporean method's success

Inhabitants placed in quarantine were obliged to send their GPS location to the government. The *TraceTogether* application, operating via Bluetooth, allowed citizens who had been in contact with a confirmed case to be notified by SMS (contact tracing). Moreover, the use of CCTV footage from hotels and certain businesses ensured that interactions between suspected cases and other citizens could be identified.

3. Astute stock management despite the risk of mask shortages

A national website notifies citizens where and when masks can be collected. The government also assumes strict control over prices, by warning companies and requiring incoming visitors to declare their masks and personal protective equipment as soon as they arrive in Singapore. As such, 1.6 million masks left unclaimed by Singapore households were rapidly returned to the government¹⁰⁰.

4. Government repurposing of local private sector industrial capacity in order to produce masks and tests

The Ministry of Health (MoH) capitalised on local producers, such as Wellchem Pharmaceuticals, in order to quickly replenish mask stockpiles for healthcare professionals, whose usual suppliers were facing shortages¹⁰¹. Meanwhile, Veredus developed the first PCR test for use in border controls, alongside Team Science and Technology Agency (HTX), a government agency¹⁰².

Despite these measures, Singapore is facing a second wave of the epidemic among migrant workers in dormitories. These densely-populated dormitories are home to migrants, mostly from India, Bangladesh or Indonesia, working on the city state's building sites. On 28 April, these workers accounted for 511 of 528 newly identified cases.¹⁰³ Since then, Singapore has been pursuing a large-scale testing and quarantine policy aimed at positive cases within these vulnerable populations. On 12 May, almost 30,000 migrant workers had been tested¹⁰⁴.

Timeline of major milestones in the crisis

1) January to mid-February: An epidemic under control thanks to strict border control

- ▶ **2 January:** Temperature checks brought in for all passengers arriving from Wuhan.
- ▶ **23 January:** First positive case detected, a tourist from Wuhan.
- ▶ **23 January:** Border closed to all travellers coming from Wuhan.
- ▶ **29 January:** All travel between Singapore and Hubei province is suspended.
- ▶ **1 February:** Border closed to all visitors who have travelled in mainland China.
- ▶ **4 February:** Weekly distribution of four FFP2 masks per household is organised.
- ▶ **7 February:** The alert level, in accordance with the Disease Outbreak Response System Condition scale, is set at orange by the Singapore government.

2) Mid-February to April: Testing, contact tracing and lockdown measures put in place

- ▶ **18 February:** A *Stay-Home Notice* is published, encouraging Singapore residents to stay at home.

¹⁰⁰ Institut Montaigne, Covid-19 : l'Asie orientale face à la pandémie, April 2020.

¹⁰¹ Lim Joyce, "Singapore's stockpile of masks replenished from many sources", *Strait Times*, 8 March 2020.

¹⁰² Teo Joyce, "Coronavirus: Singapore scientists on the front lines of fight against Covid-19", *Strait Times*, 25 March 2020.

¹⁰³ "In full: PM Lee's address to Singapore on extending circuit breaker period to June 1", *Strait Times*, 21 April 2020.

¹⁰⁴ "[News Highlight : Controlling the outbreak, Preparing for the next phase](#)", Ministry of Health website, 12 May 2020.

- ▶ **18 February:** The first stimulus plan, worth USD 2.6 billion, is announced.
- ▶ **18 March:** Borders closed to all non-citizens of Singapore.
- ▶ **21 March:** Mandatory 14-day quarantine is introduced for all Singapore citizens returning from abroad.
- ▶ **22 March:** Borders closed to all short-term travellers.
- ▶ **26 March:** The second stimulus plan, worth USD 33.7 billion, is announced.
- ▶ **3 April:** Lockdown begins, with all non-essential businesses, schools and universities closed, as a spike in cases is observed among Singapore citizens returning from abroad.
- ▶ **6 April:** The third stimulus plan, worth USD 3.6 billion, is announced.

3) April-June: Second wave of the epidemic observed among migrant workers

- ▶ **20 April:** Tests reveal that 1,426 foreign workers are carrying the virus. These new cases bring the number of infected people above the 10,000 mark, while the number of positive cases was less than 1,000 at the beginning of April¹⁰⁵.
- ▶ **21 April:** Lockdown extended until 1 June due to the spike in cases among migrant workers living in dormitories.
- ▶ **26 April:** During the week beginning 20 April, 686 workers in dormitories tested positive every day.
- ▶ **4 May:** Minister for Health Gam Kim Yong announces that 22 patients are in intensive care. In total, 150 critical care beds are available¹⁰⁶.
- ▶ **8 May:** During the week beginning 4 May, 700 workers in dormitories tested positive every day on average¹⁰⁷.
- ▶ **19 May:** The multi-minister taskforce announces the end of the lockdown (known as the *Circuit Breaker*) from 2 June onwards. This reopening will be gradual, in three phases: *Safe Re-opening*; *Safe Transition* and *Safe Nation*¹⁰⁸.
- ▶ **2 June:** First *Safe Re-opening* phase begins, lasting four weeks. Schools and businesses with a low risk of virus transmission can reopen, masks are compulsory, elderly people are encouraged to stay at home and households can have two visitors per day.

¹⁰⁵ Bruno Philip, "A Singapour, l'épidémie de Covid-19 révèle la précarité des travailleurs migrants", *Le Monde*, 23 April 2020.

¹⁰⁶ "[News Highlight : Ministerial Statement by Mr Gan Kim Yong, Minister for Health, at Parliament, on the second update on whole-of-government response to Covid-19](#)", Ministry of Health website, 4 May 2020.

¹⁰⁷ "[News Highlight : Controlling the outbreak, Preparing for the next phase](#)", Ministry of Health website, 12 May 2020.

¹⁰⁸ "Ending circuit breaker: phased approach to resuming activities safely: What you need to know about the three phases after the circuit breaker ends on 1 June 2020", government website, *A Singapore Government Agency Website*, 28 May 2020, viewed 10 June 2020.

Key figures

Indicators	2020 data
Population	60.42 million. ¹⁰⁹
Proportion of population aged over 65	22.68%. ¹¹⁰
Pre-crisis health budget	8.8% of GDP. ¹¹¹
Number of critical care beds	8.6 per 100,000 inhabitants. ¹¹²
Pre-crisis mask stockpile	Insufficient
Start of epidemic (first case)	30 January 2020.
Time lag (days) between first infection and first barrier measures	30 days.
Border closure	Yes.
Testing strategy	Strategy varied between regions - tests were only adopted by certain regions such as Veneto.
Lockdown strategy	Yes - Lockdown adopted in gradual rulings. The lockdown was initially applied to the most affected northern regions and then extended to the whole country.
Compulsory wearing of masks	Masks will be compulsory during the post-lockdown phase.
Support plan budget (% GDP)	Successive support plans announced by decrees: <ul style="list-style-type: none"> - First plan worth €25 billion announced on 11 March; - Second plan worth €55 billion announced on 13 May (decree not yet adopted)¹¹³.

Key takeaways

1. A delayed and hesitant reaction, despite the discovery of the first cases and the rapid spread of the virus

Italy was the first European country to see a significant intensity of the crisis. The northern industrial regions, such as Lombardy, Emilia-Romagna and Piedmont, which are the most economically prosperous, were those most heavily affected by the crisis. Lombardy had the highest death toll with almost half of the deaths in Italy clustered in this region. Scientists are still searching for the reason behind the rapid spread of the virus in this region, which could include the population density of Lombardy's cities, international travel or pollution rates.

However, the first measures were brought in late (30 days after the discovery of the first cases). In addition, the Italian

¹⁰⁹ World Bank data, 2018.

¹¹⁰ Ibid.

¹¹¹ OECD data, 2018.

¹¹² OECD, Beyond Containment: Health systems responses to COVID-19 in the OECD, April 2020.

¹¹³ Olivier Tosseri, "Le gouvernement italien promet 55 milliards supplémentaires pour faire face à la récession", *Les Echos*, 12 May 2020.

government gradually imposed its lockdown strategy through successive decrees¹¹⁴. These gradual measures likely contributed to the rapid spread of the virus.

2. A lockdown that set the tone in Europe

Italy was the first European country to put its population on lockdown and thus pre-empted a model response to the epidemic in Europe.

3. Decentralised healthcare governance leading to heterogeneous and uncoordinated responses between regions

The Italian health service's governance system, which is highly decentralised and administered by regional health agencies, does not allow for a coordinated and quick response across all regions¹¹⁵. Accordingly, disparities in the responses of different regions can be observed. Veneto,¹¹⁶ a region bordering Lombardy, brought in tests for people with and without symptoms, a tracing system for people infected as well as protection measures for healthcare professionals and other professions exposed to the public. The death toll is thus much lower in this region than in other northern regions.

4. Creation of extra critical care and ICU beds by redeployment within hospitals or thanks to private donations

With 8.6 critical care beds per 100,000 people as opposed to 16.3 in France¹¹⁷, the number of critical care beds was far from sufficient in Italy, even in the most economically prosperous regions. Italy thus had to resort to creating new beds, largely funded by private donations (the Fiera di Milano Hospital, with 53 critical care beds, was opened on 1 April having been built in 10 days). Furthermore, specific COVID-19 units were created and day-to-day hospital operations totally reorganised.

5. Mass testing put in place, albeit late (end of April)

Italy's testing strategy has changed dramatically since the beginning of the crisis. On 10 April, Domenico Arcuri, the Italian government's extraordinary commissioner for coronavirus, announced that a million tests had been carried out since the beginning of the lockdown¹¹⁸. Since then, Italy has developed a mass testing policy in line with the epidemic: 2.5 million tests were distributed during the week beginning 10 April. Thus, on 26 April, Italy carried out 29.7 tests per 1,000 people, a figure superior to that of Germany (25.1)¹¹⁹.

6. Lockdown exit inspired by Asian countries

Italy was able to capitalise on the experience of Asian countries and the success observed in Veneto in order to propose a lockdown exit plan respecting social distancing and based on the following principles:

- ▶ Compulsory wearing of masks;
- ▶ Social distancing in living spaces and workplaces;
- ▶ Hospital resources dedicated to COVID-19 cases;
- ▶ Strengthening of local healthcare networks;
- ▶ Implementation of Immuni, a smartphone application developed by Bending Spoons in Milan with the support of the Santagostino medical centre¹²⁰ in order to trace the movements of those infected during the 48 hours preceding infection.

¹¹⁴ Alexandre Robinet-Borgomano, "Les états face au coronavirus - L'archétype italien", *Blog de l'Institut Montaigne*, 29 April 2020.

¹¹⁵ Gary P. Pisano, Raffaella Sadun, Michele Zanini, "Lessons from Italy's Responses to Coronavirus", *Harvard Business Review*, 27 March 2020.

¹¹⁶ Jérôme Gautheret, "Coronavirus: comment la Vénétie parvient à ralentir les progrès de l'épidémie", *Le Monde*, 20 March 2020.

¹¹⁷ OECD, *Beyond Containment: Health systems responses to COVID-19 in the OECD*, April 2020.

¹¹⁸ Ibid.

¹¹⁹ OECD, *Testing for COVID-19: A way to lift confinement restrictions*, 4 May 2020.

¹²⁰ Alexandre Robinet-Borgomano, "Les états face au coronavirus - L'archétype italien", *Blog de l'Institut Montaigne*, 29 April 2020.

Timeline of major milestones in crisis management

1) End January-March: Spread of the epidemic in Italy and first lockdown measures adopted

- ▶ **30 January:** Two Chinese tourists in Rome test positive for COVID-19. Flights to and from China are thus suspended.
- ▶ **19 February:** 45,000 fans attend a match between Atalanta Bergamo and Valencia CF at the San Siro stadium in Milan.
- ▶ **20 February:** The first death linked to COVID-19 is declared in the city of Vo in Veneto. Partial lockdown measures in cities in Lombardy and Veneto are thus imposed by local politicians.
- ▶ **21 February:** Ten northern cities, including nine in Lombardy's Lodi province and one in Veneto's Padua province, are placed in quarantine. In total, 50,000 people are on lockdown from this date.

2) First half of March: Lockdown extended to the whole country

- ▶ **4 March:** Prime Minister Giuseppe Conte announces the closure of schools and universities.
- ▶ **8 March:** The quarantine zone is extended to cover the north of Italy, restricting travel to and from these regions. In total, almost a quarter of the Italian population is on lockdown at this date.
- ▶ **9 March:** The decree extending the lockdown to the whole country is adopted.
- ▶ **10 March:** The national lockdown comes into effect; travel is only allowed for professional and urgent family reasons. Furthermore, all public places are closed and gatherings are now banned and subject to fines.
- ▶ **11 March:** The lockdown is extended until 13 April. The measures of the decree of 9 March are reinforced to include the closure of shops and restaurants and restrictions on the population's movements.
- ▶ **11 March:** A €25 billion economic support plan is presented by the Italian government.

3) Mid-March to April: Strengthening of social distancing measures

- ▶ **20 March:** A study carried out by the University of Padua and the Italian Red Cross proves the success of testing carried out in Vo (Veneto).
- ▶ **22 March:** Prime Minister Giuseppe Conte announces that all activities not strictly vital for the country are to be stopped.
- ▶ **22 March:** Following the adoption of an order by the Health and Interior Ministers, Italian residents can no longer leave the city in which they are under lockdown.
- ▶ **10 April:** The lockdown is extended to 3 May.
- ▶ **17 April:** Education Minister Lucia Azzolina announces that schools will reopen in September.

4) End of April to June: Gradual lockdown exit

- ▶ **26 April:** Giuseppe Conte presents Italy's lockdown exit strategy which will begin on 4 May with the publication of a decree.¹²¹
- ▶ **27 April:** Some state construction sites are reopened.
- ▶ **4 May:** The manufacturing, construction and wholesale industries restart.
- ▶ **13 May:** The publication of a decree for a second economic support plan worth €55 billion is announced. This decree is currently awaiting adoption.
- ▶ **18 May:** Retail stores, museums, exhibition centres and libraries reopen.
- ▶ **1 June:** Bars, restaurants and other businesses deemed at risk such as hairdressers, barbers and beauty salons reopen.

¹²¹ Jérôme Gautheret, "Coronavirus: l'Italie amorce un déconfinement à pas comptés", *Le Monde*, 27 April 2020.



Germany

Key figures

Indicators	2020 data
Population	82.9 million.
Proportion of population aged over 65	21.47% in 2018. ¹²²
Pre-crisis health budget	11.2% of GDP. ¹²³
Number of critical care beds	34 per 100,000 inhabitants. ¹²⁴
Pre-crisis mask stockpile	Insufficient
Start of epidemic (first case)	27 January: first German COVID-19 case detected in Bavaria.
Time lag (days) between first infection and first barrier measures	Just 3 days after the first COVID-19 case was detected , while testing by local doctors in Germany began around 15 days after the first test was developed at the Charité University Hospital in Berlin.
Border closure	15 March: Land borders closed (movements of goods and cross-border workers still permitted) and testing put in place for new arrivals.
Testing strategy	Yes, Germany implemented a mass testing policy early on with the goal of large-scale testing of anyone thinking they had COVID-19 symptoms and those in "contact" with them. ¹²⁵
Lockdown strategy	From 12 to 23 March, Germany gradually brought in social distancing measures and emergency restrictions (closure of schools and other gathering places). Movements were allowed as long as a safe distance of at least 1.5 metres could be respected and gatherings of more than two people were forbidden. Each of the 16 Länder also brought in a range of fines to ensure these measures would be respected. On 21 March, Bavaria imposed the strictest measures on its population.
Compulsory wearing of masks	No, it was only compulsory to wear a mask in one city from 6 April: Jena, in Thuringia ¹²⁶ . This was studied amid the post-lockdown preparation. On 22 April, wearing a mask became compulsory in certain Länder.
Support plan budget (% GDP)	A huge support plan worth €1,100 billion (close to 1/3 of the country's GDP) was adopted. This rescue package includes wide-ranging assistance to businesses and employees, while also allowing the government to nationalise certain strategic groups threatened with failure.

Key takeaways

1. Pre-emptive and quick roll-out of a mass-testing strategy

¹²² ["Elderly population"](#), OECD data, 2018.

¹²³ Sandrine Gorreri, "Dépenses de santé: France versus Allemagne", *Fondation IFRAP*, 15 April 2020.

¹²⁴ Thomas Wieder and Cécile Boutelet, "En Allemagne, la bonne gestion de la crise sanitaire due au coronavirus révèle les forces et les faiblesses du système hospitalier", *Le Monde*, 29 April 2020.

¹²⁵ "Comment l'Allemagne arrive-t-elle à mettre en place un dépistage massif du coronavirus?", *Europe 1*, 30 March 2020.

¹²⁶ "Le port du masque à Iéna sert d'exemple à toute l'Allemagne", *Radio Télévision Suisse*, 27 April 2020.

Germany began carrying out screening tests on the population from the end of January. Only 15 days passed between the development of the first “PCR” test by the virology department of Charité Hospital in Berlin and the beginning of testing by local doctors. Germany was also capable of multiplying these tests in order to carry out between 300,000 and 500,000 tests per week by mid-March¹²⁷. These tests were carried out on a large scale (including for people with benign symptoms and those who been “in contact” with infected patients) in different places: hospitals, doctors’ offices and sometimes even “drive-in” centres in car parks. This large-scale testing allowed Germany to identify its infection clusters from the end of January, among people returning from China, Italy and the Austrian Tyrol¹²⁸.

This practice made it possible to obtain a clear vision of patients infected with COVID-19, isolate them and monitor them remotely, which limited the spread of the virus and gave the health system time to increase its capacity¹²⁹.

2. Regional social distancing measures and restrictions to limit contact

From 12 to 22 March, several measures were adopted, including: the closure of gathering places, a compulsory safety distance of 1.5 metres for all movements and a ban on gatherings of more than two people, punishable by fine. Given the federal nature of the country and the many key domains that fall under the control of the Länder (such as schools), these measures were adopted in different ways depending on the region. For example, Bavaria, one of the worst affected regions, brought in a strict lockdown of its population on 21 March (movements only permitted in case of emergency or for work). This federal structure can be seen as an obstacle to the coordinated management of this crisis, with differences between the Länder and their wish to follow their own lead on a federal level¹³⁰.

3. The solidity of the German health system in fighting the epidemic despite a chronic lack of qualified carers

German hospitals were not saturated at any time and the extra emergency system put in place remained mostly unused¹³¹. Furthermore, from 23 March 2020, German hospitals were able to take in infected patients from France and Italy in order to ease the pressure on those countries’ hospitals. With one of the highest health budgets as a percentage of GDP among OECD countries¹³², an abundance of hospitals¹³³ (about 1.69 hospitals and clinics per 100,000 inhabitants) and the highest number of critical care beds in Europe (34 beds per 100,000 inhabitants)¹³⁴, Germany appears to have been one of the best prepared countries before the crisis. By the beginning of April, the country was also able to rapidly increase its capacity to reach 40,000 critical care beds including 30,000 ventilators¹³⁵. This observation should however take into account the chronic lack of qualified carers which the country is facing, which meant that only a partial response to this crisis could be implemented involving the exceptional measure of deploying reserve staff (medical students, retired doctors and nurses and medically qualified migrants).

4. General practitioners mostly responsible for the care of COVID-19 patients

This allowed hospitals to focus on the most severe cases: according the data published by the Ministry of Health on 17 April, six out of seven patients infected with COVID-19 were treated as outpatients¹³⁶. Indeed, with health spending comparable to that of France, in Germany this funding is more concentrated on general practitioners¹³⁷, who manage mild cases and prevention.

¹²⁷ Jacques Pezet, “Covid-19: l’Allemagne effectue-t-elle vraiment 500 000 tests par semaine?”, *Libération*, 3 April 2020.

Violette Bonnebas, “Coronavirus, grâce au dépistage massif, l’Allemagne maîtrise l’épidémie”, *Reporterre*, 23 April 2020.

¹²⁸ Pierre Avril, “D’une région à l’autre, l’Allemagne hésite et cherche la bonne formule”, *Le Figaro*, 28 April 2020.

¹²⁹ Alexandre Robinet-Borgomano, “Les Etats face au coronavirus - L’Allemagne, un modèle résilient”, *Blog de l’Institut Montaigne*, 8 April 2020.

¹³⁰ “En Allemagne, le déconfinement en ordre dispersé”, *Courrier international*, 5 May 2020.

¹³¹ Cécile Boutelet, “Les hôpitaux n’ont été saturés à aucun moment”: en Allemagne, l’épidémie de coronavirus est “sous contrôle”, *Le Monde*, 18 April 2020.

¹³² “Health spending”, OECD data, 2018.

¹³³ Thomas Wieder and Cécile Boutelet, “En Allemagne, la bonne gestion de la crise sanitaire due au coronavirus révèle les forces et les faiblesses du système hospitalier”, *Le Monde*, 29 April 2020.

¹³⁴ *Ibid.*

¹³⁵ Stanislas Vasak, “Y a-t-il un modèle allemand dans la lutte contre le coronavirus?”, *France Culture*, 3 April 2020.

¹³⁶ *Ibid.*

¹³⁷ Sandrine Gorreri, “Dépenses de santé: France versus Allemagne”, *Fondation IFRAP*, 15 April 2020.

5. Germany's industrial capacity and the mobilisation of its industries were key factors in its response to the epidemic

Germany produces many products related to COVID-19 (pharmaceutical ingredients, medical equipment, PPE)¹³⁸. The country was able to count on its national capacities and expertise, as demonstrated by the German companies Dräger and Löwenstein, the main global producers of artificial ventilators.

Timeline of major milestones in crisis management

1) January-March: Appearance of early cases in Germany, launch and growth of testing programme

- ▶ **17 January:** Development of first test at Charité University Hospital in Berlin. Just 15 days later, testing by general practitioners began in Germany.
- ▶ **27 January:** First German COVID-19 case detected in Bavaria.
- ▶ **4 March:** Germany bans exportation of PPE.
- ▶ **11 March:** The German Chancellor, speaking to the press about the epidemic for the first time, announces that 60% of the population could potentially be infected in the long term. Furlough schemes and funds are established for businesses. **It has been pointed out many times that Angela Merkel's scientific background could have played a role in this early awareness.**

2) 12-22 March: Closure of borders combined with social distancing measures and regional restrictions

- ▶ **12 March:** The Länder gradually decided to close schools and crèches.
- ▶ **15 March:** Land borders closed (movement of merchandise and cross-border workers are still permitted) and screening measures introduced for new arrivals.
- ▶ **16 March:** The Chancellor gives a list of emergency measures being brought in to limit the spread of the virus: closure of bars and clubs, cultural institutions, playgrounds and brothels, suspension of religious services as well as foreign travel. Bavaria is the first region to declare a state of emergency.
- ▶ **20 March:** Bavaria brings in stricter lockdown measures.
- ▶ **22 March:** The federal State and the Länder agree to close restaurants and hair salons. Gatherings of more than two people in public areas are banned and subject to fines.

3) 25 March-5 April: First lockdown exit strategy measures

- ▶ **25 March:** The Bundestag adopts the economic rescue strategy and the constitutional debt brakes are lifted. While this breaks with past German fiscal orthodoxy, this rescue plan aims to reassure economic forces.
- ▶ **30 March:** An inevitable recession is announced.
- ▶ **1 April:** Restrictions are extended until after Easter.
- ▶ **15 April:** the federal State and the Länder agree on a strategy for a gradual lockdown exit.

¹³⁸ "Masques, respirateurs, tests... Pourquoi la France doit repenser sa politique industrielle après la crise du coronavirus", *Challenges*, 8 April 2020.



South Korea

Key figures

Indicators	2020 data
Population	51.8 million.
Proportion of population aged over 65	14.29% ¹³⁹ .
Pre-crisis health budget	8.1% of GDP ¹⁴⁰ .
Number of critical care beds	10.6 per 100,000 inhabitants.
Pre-crisis mask stockpile	Self-sufficient - national production of 10 million masks per day fully commandeered by the government.
Start of epidemic (first case)	20 January 2020.
Time lag (days) between first infection and first barrier measures	First measures taken on 3 January 2020 (screening and quarantine of travellers from Wuhan) - 17 days after the first case ¹⁴¹ .
Border closure	No, although travellers coming from Hubei province are forbidden from entering the country from the start of February. Nonetheless, measures were in place for international visitors: temperature checks and health declarations, screening test, compulsory 14-day self-isolation ¹⁴² .
Testing strategy	Mass testing of the population: screening tests available and funded by the government for probable cases (i.e. those with symptoms).
Lockdown strategy	No complete lockdown: promotion of social distancing measures, public events cancelled, gathering places and schools closed.
Compulsory wearing of masks	Mask-wearing widely increased: masks provided by the government at a fixed price and distributed in pharmacies. Compulsory to wear a mask in certain places such as the Seoul metro ¹⁴³ .
Support plan budget (% GDP)	11.4% - \$175bn ¹⁴⁴ .

¹³⁹ OECD data, 2018.

¹⁴⁰ Ibid.

¹⁴¹ Institut Montaigne, Covid-19 : l'Asie orientale face à la pandémie, April 2020.

¹⁴² Ibid.

¹⁴³ Kim Bo-gyung, "Face masks now mandatory on Seoul Metro during rush hour", *The Korea Herald*, 13 May 2020.

¹⁴⁴ "Tackling coronavirus (COVID-19) - Contributing to a global effort", OECD website, viewed 7 May 2020.

Key takeaways

1. The government's anticipation and the implementation of social distancing measures even before the first COVID-19 cases were declared in South Korea partially explain how the epidemic was brought under control

As soon as the virus appeared in Wuhan, the government took a head start by announcing that borders would be closed to all travellers arriving from Wuhan, even though the first confirmed COVID-19 case in South Korea was only declared 17 days later on 20 January. The emergency approval of a test kit on 4 February and its availability in over 50 clinics three days later meant that a large number of patients could be screened very early on¹⁴⁵.

2. An institutional framework strong in crisis management with much experience (SARS 2003, MERS 2015)

South Korea has an arsenal of laws to fight possible epidemics: the 2010 Infectious Disease Control and Prevention Act provides for a disease prevention and control plan to be drawn up every five years by the Minister for Health (sharing of duties, control measures, etc.). The law was expanded following the 2015 MERS-CoV epidemic and allows for coordination between different institutions as well as the management of hospitals and carers. The horizontal coordination between all those involved is ensured by the Central Safety Management Committee, as well as by the Interior Ministry's various offices dedicated to different types of crisis, such as the Public Health Disaster Division which is in charge of coordination with the Health Ministry. Lastly, vertical coordination is allowed by the country's decentralised governance system, divided into 17 provinces and metropolises. Local governments are thus responsible for drawing up a Safety Management Plan, as well as a specific plan to prevent infectious diseases. The country can also count on its 256 public healthcare facilities.¹⁴⁶

3. A proactive industrial policy resulting in self-sufficiency in masks and screening tests

At the beginning of March, the Korean government took control of mask production which reached 10 million per day, and distributed 80% of these at a fixed price in pharmacies, allowing two masks to be purchased daily on presentation of an ID card¹⁴⁷. The screening tests were developed by Kogene Biotech Co Ltd, approved on 4 February and made available across 50 clinics on 7 February. By the end of March, five Korean companies were producing these kits and the country began to export them¹⁴⁸.

4. Systematic and targeted screening of the population, which allowed the spread of the virus to be controlled

Following the discovery of a cluster in Daegu after a Shincheonji Church meeting, the Korean government began a screening campaign, having obtained a list of the religious organisation's 210,000 members on 25 February. On 9 March, the Korean Centre for Disease Control announced that it had almost finished testing the 10,000 Daegu-based members of the organisation. Apart from Daegu, the epidemic was managed via a large-scale campaign combining free access and contact tracing, with the government funding tests for probable cases from January as well as hospitalisation and treatment fees, even offering payment to people who went into quarantine. Around forty drive-through test centres were set up allowing patients to be tested without leaving their vehicles, receiving their results by text¹⁴⁹. Systematic testing of international visitors allowed the detection of imported COVID-19 cases¹⁵⁰.

¹⁴⁵ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

¹⁴⁶ OECD Reviews of Public Health: Korea, 31 March 2020.

¹⁴⁷ Min-kyung Jung, "South Korean government takes full control of face mask supply, bans exports", *The Korea Herald*, 5 March 2020.

¹⁴⁸ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

¹⁴⁹ Ibid.

¹⁵⁰ "Tackling coronavirus (COVID-19) - Contributing to a global effort", OECD website, viewed 7 May 2020,

5. Thorough and intrusive contact tracing of positive cases combined with rigorous surveillance of quarantine

In order to identify those in contact with virus carriers, authorities used contact tracing without consent by consulting data from mobile phones, bank cards and CCTV cameras. Identified probable cases were placed in quarantine for 14 days. International visitors were also quarantined for 14 days. Those placed in quarantine were strictly monitored via the Interior Ministry's self-quarantine safety protection application, which allowed the user to be located and the authorities to be informed of developments in their symptoms. Breaking quarantine was punishable by fine (\$2,477 increased to \$8,257) or even one year's imprisonment.¹⁵¹

6. Thanks to a combination of these elements, there was no need to impose a total lockdown

Social distancing measures (events cancelled and closure of public places), universal wearing of masks, the mass testing policy along with screening of international visitors, contact tracing for probable cases and rigorous surveillance of quarantine observation are among the many measures that allowed South Korea to manage the COVID-19 crisis without having to put its whole population on lockdown.

Timeline of major milestones in crisis management¹⁵²

1) January-February 2020: Beginning of the epidemic in China and initial anticipatory measures

- ▶ **3 January:** First screening and quarantine measures for travellers arriving from Wuhan¹⁵³.
- ▶ **20 January:** First Korean COVID-19 case.
- ▶ **4 February:** Approval of Kogen Biotech Co Ltd's screening test.
- ▶ **7 February:** Test available in 50 clinics.

2) February 2020: Increase in number of COVID-19 cases, start of testing and contact tracing policies

- ▶ **21 February:** Cases multiply by 6 in three days - 204 cases among 16,000 tested, mostly in the Daegu region (linked to the Shincheonji Church).
- ▶ **23 February:** The Daegu region (which then had 82% of cases) is classified as a special management zone by the government¹⁵⁴.
- ▶ **25 February:** List of 210,000 Shincheonji members obtained by the Korean Centre for Disease Control and the epidemic is controlled thanks to mobile phone data.
- ▶ **15 March:** The Daegu region is classified as a Special Disaster Zone by the government so that dedicated funding can be allocated.¹⁵⁵

3) March 2020: Screening and contact tracing measures become widespread, mask stocks are secured

- ▶ **5 March:** The government announces that exportation of masks is prohibited and that fair distribution among the population will be ensured.
- ▶ **19 March:** Special entry procedures for all international visitors (temperature checks, health declaration, travel history and contact information).
- ▶ **22 March:** Systematic screening of travellers coming from Europe.
- ▶ **22 March:** Social distancing campaign launched by the government for a duration of two weeks: people are encouraged to stop religious, sporting and leisure activities.
- ▶ **26 March:** Launch of a new contact tracing programme using big data.

¹⁵¹ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

¹⁵² Ibid.

¹⁵³ Ibid.

¹⁵⁴ "Tackling coronavirus (COVID-19) - Contributing to a global effort", OECD website, viewed 7 May 2020,

¹⁵⁵ Ibid.

- ▶ **1 April:** Compulsory quarantine for all incoming travellers.

4) April-May 2020: Towards a slowdown of the epidemic?

- ▶ **4 April:** First day with no new national cases - only 4 cases are declared, all imported by international travellers¹⁵⁶.
- ▶ **15 April:** General elections are held.
- ▶ **6 May:** End of Korean government's intensive "social distancing" campaign.
- ▶ **11 May:** Discovery of a new cluster, authorities attempt to track down 5,500 people who went to bars and nightclubs in Seoul between 24 April and 6 May¹⁵⁷.

¹⁵⁶ Mark Zastrow, "How South Korea prevented a coronavirus disaster - and why the battle isn't over", *National Geographic*, May 2020.

¹⁵⁷ Kong Kanga and Lee Jihye, "Korea's virus strategy is tested by outbreak at nightclubs", *Bloomberg*, 11 May 2020.



Taiwan

Key figures

Indicators	2020 data
Population	23.59 million. ¹⁵⁸
Proportion of population aged over 65	14.55%, while 12.9% are aged 0-14: the country is thus ageing. ¹⁵⁹
Pre-crisis health budget	8.1% of GDP. ¹⁶⁰
Number of critical care beds	28.5 per 100,000 inhabitants. ¹⁶¹
Pre-crisis mask stockpile	Average: the country had a sufficient quantity of masks and quickly undertook a large-scale production policy.
Start of epidemic (first case)	The first case was declared on 21 January 2020: a Taiwanese businesswoman working in Wuhan who returned to the island.
Time lag (days) between first infection and first barrier measures	Taiwan reacted in December, well before the first confirmed case nationally.
Border closure	Borders were gradually closed: the country had progressively strengthened its border controls before closing them to non-residents in mid-March.
Testing strategy	Yes, although targeted at people in quarantine with symptoms.
Lockdown strategy	No: the country chose to apply a strict quarantine policy rather than a total lockdown.
Compulsory wearing of masks	Yes: it was made compulsory to wear a mask on public transport.
Support plan budget (% GDP)	5.8% of GDP (estimation in April 2020).

Key takeaways

1. A response preceding the first national case, linked to the SARS experience

While the human and economic links between China and Taiwan gave rise to fears of an unprecedented spread of the virus, the SARS experience allowed the Taiwanese government to react quickly, before the first case was even confirmed in the country. On 31 December 2019, President Tsai hosted a meeting of a national security committee to set an action plan. In January, the re-elected president speaks with Vice-President Chen Chien-jen, a trained epidemiologist and Health Minister during the 2003 SARS crisis. On 15 January, coronavirus is legally recognised as an infectious illness, five days before China, which allowed the government to implement isolation and contact tracing measures.

2. An ad hoc epidemic management organisation

¹⁵⁸ Mathieu Duchâtel, François Godement and Viviana Zhu, "Covid-19: l'Asie orientale face à la pandémie", *Institut Montaigne*, Avril 2020.

¹⁵⁹ Statistical Year Book of the Republic of China 2018, 2019 edition.

¹⁶⁰ François Chih-Chung Wu, "Pourquoi Taïwan est toujours exclu de l'Organisation mondiale de la Santé", *Le Nouvel Observateur*, 20 May 2019.

¹⁶¹ Jason Phua, Mohammad Omar Faruq et al., *Critical care bed capacity in Asian countries and regions*, *Critical Care medicine*, January 2020.

On 20 January, the Central Epidemic Command Center (CECC) created after the SARS epidemic is activated. Falling under the authority of the Ministry of Health, the CECC is tasked with assisting epidemic management across several fields: planning, research, procurement of treatment as well as surveillance and international cooperation. This allowed efficient communication with the population before the appearance of the first national case, triggering for example the universal wearing of masks among the population. The centre also facilitated the deployment of national resources.

3. A strict border control and quarantine strategy which allowed the country to avoid lockdown

There was no lockdown in Taiwan. Temperature checks for all passengers coming from Wuhan as well as medical examination of probable cases were brought in at ports, train stations and airports from 31 December. Border controls became gradually stricter: strict quarantine was imposed on all international visitors, before air borders were closed to all non-residents (mid-March). Residents who tested positive were also quarantined.

Quarantine was very strict: Taiwanese residents confined themselves at home, while non-residents were accommodated in hotels. The government closely monitored those in quarantine, giving them mobile phones in order to monitor their movements and interactions. Breaking quarantine was subject to a fine of up to one million Taiwanese dollars (€30,000). A false health declaration by an incoming passenger was subject to a fine of USD 5,000.

4. Targeted screening

From 31 January, customs and national health databases were merged, allowing hospitals, clinics and pharmacies to view the travel history of all patients and to target screening for those with symptoms: people in quarantine with symptoms were the only ones to be tested.

5. State commandeering and takeover of production lines for mask self-sufficiency

The Taiwanese government was strongly interventionist during the COVID-19 crisis, banning exportation of masks and then requisitioning all mask factories at the end of January, before purchasing a further 60 medical mask production lines. Soldiers and army reserves were mobilised to ensure these production lines functioned correctly. Daily mask production went from 4 million to 13 million at the end of March, reaching 17 million per day in mid-May. Two policies of sending masks abroad were implemented, involving the donation of 16 million masks.

6. Excellent organisation of mask wearing with the logistical help of information systems

Wearing a mask was strongly recommend and fines were imposed for not wearing them on public transport. The country mobilised the postal service in order to organise distribution, rationing and traceability. From 6 February, Taiwanese residents could collect up to 3 masks per adult every seven days, for a fixed price of 5 Taiwanese dollars. They needed to present their health insurance card, passport or residence permit. Using the national health insurance number allowed the authorities to keep purchase histories and ensure that no citizen exceeded the authorised mask limit. This also allowed mask distribution to be organised by assigning each citizen a specific day to collect the masks, in accordance with the last numbers of their social security number.

Digital solutions supported the organisation of rationing: masks could be ordered with the national health insurance number, using a mobile phone application, a computer equipped with a card reader or a digital citizen certificate. Residents could find out how many masks were available in pharmacies, public health centres or the many convenience stores, using different applications including a dedicated one, but also with Line, the most widely used communication application in the country. The national health insurance agency put new servers in place to ensure the platform's efficiency.

7. Widespread use of digital solutions in crisis management

Besides their use in mask management, digital solutions were also used for early detection of persons at risk - thermal cameras in ports and airports, merging of customs and health databases in order to place people in quarantine. They were also used to monitor people placed in quarantine - location tracking, detection of interactions to extend the quarantine if needed; this data can be consulted by the health authorities on request. These omnipresent solutions were among the main keys to the success of this country strongly exposed to the virus.

Timeline of major milestones in crisis management

1) 31 December 2019 - 21 January 2020: Anticipated measures before the first declared case on the island

- ▶ **31 December:** Medical exam of all passengers arriving from Wuhan - temperature checks and examination of pneumonia-like symptoms / meeting of the national security council arranged by President Tsai to set an action plan for January.
- ▶ **5 January:** Medical examination of persons having travelled to Wuhan in the last 14 days.
- ▶ **15 January:** Legal recognition of coronavirus as a Category V infectious disease by Taiwan's Centers for Disease Control.
- ▶ **20 January:** Activation of the Central Epidemic Command Center created after the SARS crisis to coordinate and implement crisis management.
- ▶ **21 January:** First Taiwanese COVID-19 case, a Wuhan-based businesswoman who returned to Taiwan.

2) 22 January - 1 February 2020: Foundations of crisis management based on dissuasive sanctions and an interventionist, intrusive State

- ▶ **22 January:** The Yuan executive - the Taiwanese government's executive branch - introduces fines of up to 3 million Taiwanese dollars (USD 100,000) for spreading fake news about the epidemic.
- ▶ **24 January:** Exportation of surgical masks banned for a period of one month.
- ▶ **27 January:** The National Immigration Agency's databases are merged with those of the national healthcare agency.
- ▶ **28 January:** First case of coronavirus involving a resident infected in Taiwan.
- ▶ **29 January:** Adoption of electronic surveillance of people placed in quarantine.
- ▶ **30 January:** Fixed price for surgical masks (8 Taiwanese dollars).
- ▶ **31 January:** Smartphone alert sent to all residents indicating where travellers on the Diamond Princess, a cruise ship on which the virus spread widely, had passed.
- ▶ **1 February:** A special budget of 200 million Taiwanese dollars (USD 6.6 million) is adopted to increase mask production.

3) 6 - 16 February 2020: Stricter rules applied to recent travellers and launch of national mask distribution and rationing policy

- ▶ **6 February:** Border closed to all Chinese citizens, residents can now buy three masks every seven days by presenting their health insurance card, residence permit or passport.
- ▶ **7 February:** All foreign citizens who have travelled to China, Hong Kong or Macau during the last 14 days are banned from entering.
- ▶ **16 February:** National health database is extended to include travel over the last 30 days.

4) 26 February - 1 April 2020: Exceptional release of funding to manage the health crisis, stricter control measures and sanctions, digitisation

- ▶ **26 February:** The Special COVID-19 Prevention Law is enacted, providing for urgent financial support worth 60 billion Taiwanese dollars (€1.8bn) to the Health, Economy and Transport ministries, allowing the purchase of 60 mask production lines. The law provides for increasing the maximum fine for breaking quarantine or illicit stockpiling of medical supplies.
- ▶ **5 March:** Financial support provided to employers and employees via grants coming from two pre-existing Labour Ministry funds (job stability and insurance funds).
- ▶ **10 March:** A rule that provides for paid quarantine and isolation periods is enacted - USD 33 per day during 14 days.
- ▶ **12 March:** A website is launched allowing citizens to order masks and find out where they are available.
- ▶ **18 March:** 23 new cases confirmed, representing the biggest increase since the beginning of the health crisis, of which 22 cases involve people returning from Europe, Asia or the USA. All foreign citizens are banned from entering the country and a 14-day quarantine is imposed on all Taiwanese people returning from abroad.

- ▶ **1 April:** President Tsai Ing-wen announces an increase in recovery measures, reaching 1,050 billion Taiwanese dollars (USD 34.72 billion). Recovery measures implemented to date are worth 5.8% of GDP in total.
- ▶ **3 April:** Masks are made compulsory on the Taipei metro.



Key figures

Indicators	2020 data
Population	66.4 million.
Proportion of population aged over 65	18.31%.
Pre-crisis healthcare budget	9.8% of GDP.
Number of critical care beds	10.5 per 100,000 inhabitants (<i>source: OECD data for England alone</i>).
Pre-crisis mask stockpile	Shortage of PPE (masks, gloves, visors) for NHS staff due to poor supply management and distribution problems.
Start of epidemic (first case)	31 January 2020.
Time lag (days) between first infection and first barrier measures	47 days - initial measures announced on 18 March.
Border closure	No.
Testing strategy	100,000 swab tests carried out per day from 1 May on persons showing symptoms, NHS staff and "essential workers". Nevertheless, test capacities were overestimated and insufficiently accessible.
Lockdown strategy	Total lockdown - closure of schools, cancellation of public events and social distancing.
Compulsory wearing of masks	No - masks were not made compulsory, even on the London underground, despite demands from city authorities. ¹⁶²
Support plan budget (% GDP)	18.1% (<i>source: OECD</i>).

Key takeaways

5. Tardy reaction to ramp-up of epidemic

Lockdown measures were implemented on 23 March, over 50 days following the occurrence of the first case in the UK, much later than in the other European countries. The government, which defended a "herd immunity" strategy before changing tack, was widely criticised by public opinion for its lack of responsiveness.

6. Crisis management based on the recommendations of a scientific committee

SAGE (Scientific Advisory Group for Emergencies) is a group of independent scientists that issues recommendations on specific issues to government decision-makers. SAGE was consulted by the government regarding the response to the COVID-19 crisis and, as such, published a range of scientific content supporting the decisions taken: for example, a document was published on 19 February regarding the impact of the closure of schools. Nevertheless, the government's slow reaction to curb the spread of the virus raised a number of questions regarding the nature of the recommendations issued by these scientific advisers. According to a Reuters investigation, SAGE failed to sufficiently warn the government of the risks related to a COVID-19 epidemic in the UK and ruled out too early the options of quarantine or mass testing of the population.

7. Mass deployment in support of the health service

¹⁶² REF TO BE INSERTED

To prepare for the influx of patients and potential saturation of intensive care services, the NHS postponed non-essential operations and organised 8,000 beds in private sector facilities. The army was also deployed to set up temporary hospitals for the NHS, thereby increasing intensive care capacity in England alone by over 8,000 beds.

8. A testing strategy that struggled to meet its targets

Over the course of a month, the UK managed to multiply its testing capacity by nearly 10, going from just over 10,000 tests per day at the beginning of April to over 100,000 tests per day from 1 May 2020¹⁶³. Screening tests may be carried out in drive-in centres (around 50 centres), via home self-test kits, at NHS facilities or by mobile units operating in retirement homes and prisons¹⁶⁴. The government was accused of exaggerating the number of tests carried out, for example by counting tests sent by post that had not yet been performed¹⁶⁵. The reliability of the tests performed and, particularly, the quality of samples, were also challenged on a number of occasions¹⁶⁶. Test capacity was primarily increased thanks to the involvement of research bodies, universities and the private sector: on 1 May 2020, 50% of the 6,000 patients tested positive for COVID-19 were tested by such institutions¹⁶⁷. The UK gradually expanded public access to tests: first, to patients showing serious symptoms, then to NHS staff and their families, “essential workers” (transport, teaching, etc.) and their families, and patients aged over 65 showing symptoms. Accordingly, from 24 April tests were available for all essential workers (healthcare, education, major retail, security, transport, etc.) and their families, encompassing 10 million people¹⁶⁸. These tests, however, could no longer be obtained on 25 April via the special website set up for ordering home test kits¹⁶⁹. Lastly, the UK uses the antibody test developed by Public Health England to determine the percentage of the population that has contracted the virus.

9. Shortage of PPE for NHS staff

A survey published by the British Medical Association¹⁷⁰ on 3 May showed that half of doctors had to procure PPE by their own means as it was not supplied by the NHS. Having spoken of problems in the distribution of PPE, the government finally admitted that the UK was facing a shortage¹⁷¹. Meanwhile, Public Health England adapted its stance on the use of equipment in accordance with the shortage, in some cases recommending the reuse of gowns or use of alternative equipment¹⁷².

10. The organisation of online solutions by the NHS provided guidance for some patients and helped ensure continuity of care

The NHS set up the NHS 111 Online Coronavirus Service, an online questionnaire filled in by patients which provides them with guidance depending on their symptoms. In addition, there was an unprecedented boom in remote consultation services and digital prescriptions from the start of the crisis: 1.25 million digital prescriptions via EPS (Electronic Prescription Service) were recorded by the NHS in March, compared to 220,000 in February, and demand for remote consultations has exploded since the start of the epidemic (70% increase in weekly requests on Push Doctor and 100% weekly increase on Docly since the start of the epidemic, according to The New York Times).

11. Unprecedented recovery plan to support the economy

The government announced an unprecedented recovery plan with a budget of over GBP 400 billion (€459 billion) or 18.1% of GDP. The funds will be used to pay the salaries of furloughed employees (80% of salary), guarantee an income for the self-employed, offer state-guaranteed loan to businesses in difficulty and offset suspended VAT repayments.

¹⁶³ Cabinet Office Briefing Room, “Covid-19 press conference”, 3 May 2020.

¹⁶⁴ Department of Health and Social Care, “Guidance - Coronavirus (COVID-19): getting tested”, 15 April 2020.

¹⁶⁵ Hannah Devlin, “Is 100,000 tests a day an effective virus strategy against coronavirus?”, *The Guardian*, 1 May 2020.

¹⁶⁶ Juliette Garside and Lisa O’Carroll, “Concerns over delays and errors at UK drive-in coronavirus test centres”, *The Guardian*, 28 April 2020.

¹⁶⁷ Cabinet Office Briefing Room, “Covid-19 press conference”, 3 May 2020.

¹⁶⁸ “Key workers: official list of personnel in England who can get a coronavirus test”, *The Guardian*, 24 April 2020.

¹⁶⁹ Mattha Busby, “Coronavirus tests for key workers in England run out quickly for second day”, *The Guardian*, 25 April 2020.

¹⁷⁰ British Medical Association, “BMA survey reveals almost half of doctors have relied upon donated or self-bought PPE and two thirds still don’t feel fully protected”, 3 May 2020.

¹⁷¹ Molly Blackall, “PPE including gowns and masks running out, admits UK government”, *The Guardian*, 18 April 2020

¹⁷² “Coronavirus: Concern over protective kit guidance change”, *BBC*, 18 April 2020.

Timeline of major milestones in crisis management

1) February to mid-March: Increase in the number of COVID-19 infections in the UK and initial measures

- ▶ **31 January:** The first two cases of coronavirus are diagnosed in the UK.
- ▶ **5 March:** First death from COVID-19 in the UK; the number of infected persons crosses the 100 mark.
- ▶ **11 March:** Chancellor of the Exchequer Rishi Sunak announces a GBP 12 billion (€13.77 billion) emergency plan to support the economy.
- ▶ **13 March:** Premier League suspended.
- ▶ **15 March:** Secretary of State for Health and Social Care Matt Hancock announces that elderly persons could be placed under lockdown for as long as four months.
- ▶ **16 March:** Boris Johnson calls on the population to prioritise working from home and to stay away from restaurants and pubs. The number of infections reaches 1,500 and the total death toll from COVID-19 reaches 55.

2) Mid-March: Lockdown measures and strengthening of NHS capacity

- ▶ **18 March:** The government announces that most schools in England will close from 20 March: Wales and Scotland also announce the closure of schools.
- ▶ **20 March:** Boris Johnson orders the closure of restaurants, pubs and all meeting places until further order. The Chancellor of the Exchequer announces that the government will pay employees liable to be laid off 80% of their salaries.
- ▶ **21 March:** The NHS announces a historical partnership with private hospitals: 8,000 extra beds and 20,000 extra medical staff.
- ▶ **23 March:** Total lockdown is announced; movements outside the home are permitted solely in order to do the shopping, take physical exercise once a day, attend a medical appointment or go to work if working from home is not possible.

3) April-May 2020: Deployment and extension of testing amid persisting grave deficiencies

- ▶ **24 April:** Test extended to all "essential workers" (healthcare, transport, police, food, education, etc.) and their families, encompassing 10 million people. However, tests run out on the second day of the subscription platform.
- ▶ **1 May:** The government announces that it has reached its target of 100,000 tests per day; it is nevertheless accused of exaggerating this figure (particularly by counting home test kits sent but not yet performed), while the reliability of some tests and test centres is also called into question.
- ▶ **3 May:** Public Health England revises its recommendations regarding the use of PPE by health workers in view of the shortage. A British Medical Association survey shows that half of doctors in England said they had to procure PPE by their own means (purchases or donations).



Key figures

Indicators	2020 data
Population	7.45 million. ¹⁷³
Proportion of population aged over 65	17%. ¹⁷⁴
Pre-crisis healthcare budget	HKD 167,581 million in 2017-2018 (6.2% of GDP). ¹⁷⁵
Number of critical care beds	7.1 critical care beds per 100,000 inhabitants. ¹⁷⁶
Pre-crisis mask stockpile	Insufficient. Hong Kong's strong dependence on imports was offset primarily by early engagement of foreign suppliers. Requirement estimated at around 200 million masks per month. ¹⁷⁷
Start of epidemic (first case)	22 January 2020: First case of COVID-19 detected in Hong Kong. ¹⁷⁸
Time lag (days) between first infection and first barrier measures	4 January 2020: Launch of a COVID-19 response plan by the government 18 days before detection of the first case of infection in Hong Kong.
Border closure	Hong Kong decided to prioritise border controls (including temperature checks), restrictions on cross-border travel and placement of incoming travellers in quarantine over the more drastic measure involving total closure of borders, which was not implemented until 25 March 2020.
Testing strategy	Testing strategy targeted at incoming travellers. During the "second wave" when most cases involved travellers who had been infected outside Hong Kong, compulsory testing was carried out at the airport via throat swab tests on travellers at risk ¹⁷⁹ .
Lockdown strategy	Without resorting to a "strict" lockdown as in China, Hong Kong employed a series of restrictive and social distancing measures. <ul style="list-style-type: none"> - End January: Closure of schools and work-from-home arrangements introduced for administrative staff. - End March (due to the growing number of persons returning from abroad): Ban on gatherings of more than 4 people (except at places of work) and closure of crowded places such as karaoke bars¹⁸⁰.
Compulsory wearing of masks	Spontaneous adoption of individual precautionary measures (widespread wearing of masks, social distancing) by the population in light of their experience with the 2003 SARS epidemic. On 31 December 2020 the authorities issued simple recommendations regarding the wearing of masks, personal hygiene and social distancing.
Support plan budget (% GDP)	All in all, a budget of USD 38.6 billion was allocated to revive the economy

¹⁷³ [Population Data.net data](#), 2020.

¹⁷⁴ [World Bank data](#), 2019.

¹⁷⁵ Health Facts of Hong Kong 2019.

¹⁷⁶ ResearchGate data "[Number of critical care beds per 100,000 population](#)", viewed 4 June 2020.

¹⁷⁷ Institut Montaigne, Covid-19: l'Asie orientale face à la pandémie, April 2020.

¹⁷⁸ "Le port du masque signe la différence culturelle entre l'Asie et l'Orient", *Courrier international*, 3 April 2020.

¹⁷⁹ Samuel Wong, On Kwok Kin, K.L Chan Francis, "Que peuvent apprendre les pays de la réponse de Hong Kong à la pandémie de Covid-19?", *Canadian Medical Association Journal*, 11 May 2020.

¹⁸⁰ *Ibid.*

in Hong Kong. Among other things, the government introduced a **special allowance system for low-income families and students** in partnership with the Working Family and Student financial assistance agency. All citizens aged over 18 received a grant of USD 1,289.

Key takeaways

1. Early response facilitated by the existence of an institutional system set up after the SARS epidemic that ravaged Hong Kong in 2003 and 2004

The Hong Kong government capitalised on this experience by strengthening its capacity to manage future crises, primarily through the creation of a centralised institution known as the Centre for Health Protection in 2004. This institution reacted immediately after the Wuhan authorities recognised a case of severe pneumonia of unknown origin on 31 December 2019, by publishing a press release on the situation. On 3 January, thermal imaging temperature checks were introduced at border stations (including isolation, treatment and tracking of travellers arriving from Wuhan in the event of fever). The next day, a COVID-19 Preparedness and Response Plan¹⁸¹ was launched (18 days before detection of the first case of infection in Hong Kong).

2. From early February, gradual reduction in cross-border travel and quarantining of incoming travellers, followed by closure of borders at the end of March, primarily under pressure from public opinion

At first, only Chinese travellers arriving from Wuhan and Hubei province were concerned by the travel restrictions, compulsory quarantine and requirement to fill in a health declaration on arrival. These measures were subsequently extended to all travellers arriving from mainland China and all foreign travellers. The gradual reinforcement of the system was prompted by the occurrence of the first local case and by public opinion, which felt that the measures adopted to date were insufficient and called for a total closure of borders with mainland China (industrial action by over 3,000 public hospital workers on 3 February 2020¹⁸²).

3. Close contact tracing and epidemiological surveys to identify places of recent interaction involving probable or confirmed cases, coupled with public dissemination of this information leading to the quarantining of “contact” persons

Travel history and the results of these surveys are published online. An “interactive dashboard” shows all confirmed COVID-19 cases on a map, as well as the history of movements of these individuals¹⁸³. Citizens are invited to contact the Centre for Health Protection and all contact persons are quarantined in a special centre.

4. Quarantine at home or in special centres combined with strict surveillance and dissuasive sanctions

Initially applied to persons who had come into “contact” with the first detected cases and to travellers arriving from areas at risk, these quarantine measures were later extended to all incoming travellers. A strict surveillance system was introduced (electronic bracelets, unexpected control). The maximum sanction consisted of a USD 641 fine and six months’ imprisonment¹⁸⁴.

¹⁸¹ Centre for Health Protection, [Preparedness and Response Plan for Novel Infectious Disease of Public Health Significance](#), January 2020.

¹⁸² “Coronavirus: à Hong Kong, le personnel hospitalier menace de faire grève”, *Rtbf*, 1 February 2020. Ramzy Austin and May Tiffany, “Hong Kong Tightens Border as Medical Workers Call for Shutdown”, *The New York Times*, 3 February 2020.

¹⁸³ [“Latest situation of Coronavirus Disease”](#), Centre for Health Protection website, viewed 4 June 2020.

¹⁸⁴ Institut Montaigne, Covid-19: l’Asie orientale face à la pandémie, April 2020, page 20.

5. **The spontaneous adoption of individual protection measures** (wearing of surgical masks in public places, hand washing, social distancing) by the Hong Kong population shaken by its experience with the SARS epidemic in 2003¹⁸⁵ may also have contributed towards curbing the spread of the epidemic.
6. **Early engagement of foreign suppliers to supply masks, combined with stimulation of local production**

To offset Hong Kong's strong dependence on imports, unnecessary import procedures were suspended and the decision was made to engage foreign suppliers in advance and contact the authorities of mainland China. Local production was also stimulated by the introduction of a subsidy scheme totalling around HKD 1,500 million¹⁸⁶.

Timeline of major milestones in crisis management

1) From 31 December to 25 January: Initial and gradual early response

- ▶ **31 December:** Press release issued by the Centre for Health Protection.
- ▶ **3 January:** Border controls including temperature checks on passengers arriving from Wuhan (thermal imaging systems set up at the airport).
- ▶ **4 January:** Launch of COVID-19 Preparedness and Response Plan by authorities, based on a 3-tier response level system (Alert, Serious and Emergency)¹⁸⁷. The "Serious" level was triggered on the same day.
- ▶ **8 January:** Obligation for doctors to report the disease to the Centre for Health Protection. These notification criteria were revised and extended on 16 January in view of the increasing number of cases in mainland China and the occurrence of imported cases in other countries.
- ▶ **22 January:** First case of COVID-19 detected¹⁸⁸. Contact tracing started immediately with the quarantining of "contact" persons.

2) From 25 January to 29 March: Restrictions on cross-border travel combined with the quarantining of incoming travellers and ban on entering the territory in order to limit imported cases

- ▶ **25 January:** Suspension of incoming flights from Wuhan followed by the reduction by half of journeys between Hong Kong and mainland China from 30 January. **Same day: triggering of "Emergency" level, the highest level in the COVID-19 Preparedness and Response Plan, after further imported cases were identified.**
- ▶ **29 January:** The compulsory health declaration (already effective from 21 January for travellers arriving from Wuhan) is extended to all travellers arriving from mainland China by air. It was further extended to all travellers on 8 March.
- ▶ **30 January:** The ban on entering the territory (already effective from 27 January for travellers arriving from Hubei province) is extended to travellers arriving from mainland China via the suspension of the Individual Visit Scheme.
- ▶ **8 February:** 14-day compulsory quarantine for all travellers arriving from mainland China, extended 19 March to all travellers arriving in Hong Kong.
- ▶ **25 March:** Ban on entry for all non-resident travellers.

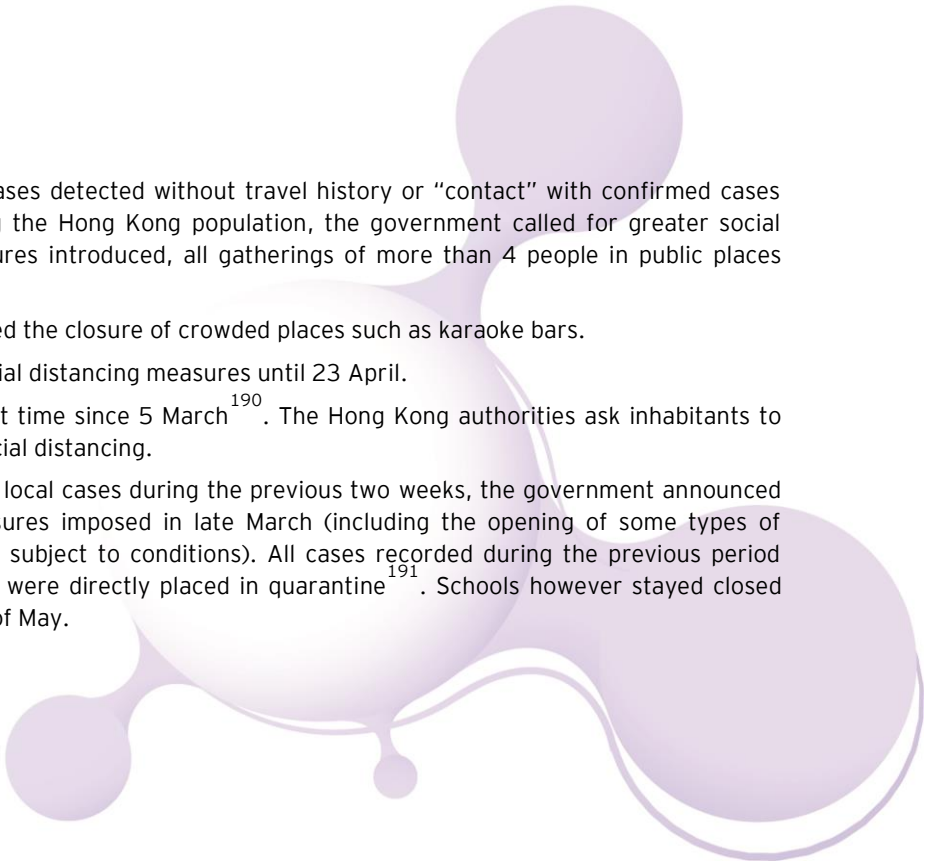
3) From 29 March to 5 May: From the announcement of greater social distancing and restrictive measures among the Hong Kong population towards gradual easing of these measures

¹⁸⁵ Samuel Wong, On Kwok Kin, K.L. Chan Francis, "Que peuvent apprendre les pays de la réponse de Hong Kong à la pandémie de Covid-19?", *Canadian Medical Association Journal*, 11 May 2020.

¹⁸⁶ Chik Holly, "Hong Kong surgical mask manufacturers to begin supplying government from late May under subsidy scheme", *South China Morning Post*, 19 May 2020.

¹⁸⁷ Centre for Health Protection, [Preparedness and Response Plan for Novel Infectious Disease of Public Health Significance](#), January 2020.

¹⁸⁸ "Le port du masque signe la différence culturelle entre l'Asie et l'Orient", *Courrier international*, 3 April 2020.

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- ▶ **29 March:** Following the identification of cases detected without travel history or “contact” with confirmed cases and given the impossibility of mass testing the Hong Kong population, the government called for greater social distancing¹⁸⁹. Among the restrictive measures introduced, all gatherings of more than 4 people in public places were banned.
 - ▶ **1 April:** Restrictive measures applied included the closure of crowded places such as karaoke bars.
 - ▶ **8 April:** Government decision to prolong social distancing measures until 23 April.
 - ▶ **20 April:** No new case detected for the first time since 5 March¹⁹⁰. The Hong Kong authorities ask inhabitants to continue to apply hygienic measures and social distancing.
 - ▶ **5 May 2020:** In view of the absence of new local cases during the previous two weeks, the government announced the partial lifting of some restrictive measures imposed in late March (including the opening of some types of meeting places, such as bars and cinemas, subject to conditions). All cases recorded during the previous period involved persons entering Hong Kong, who were directly placed in quarantine¹⁹¹. Schools however stayed closed and reopening was scheduled from the end of May.

¹⁸⁹ “CHP explains rise in Covid-19 cases”, *News.gov.hk*, 28 March 2020, viewed 9 June 2020.

¹⁹⁰ “Coronavirus, Pas de nouveau cas à Hong Kong depuis le 5 mars”, *Ouest France*, 20 April 2020.

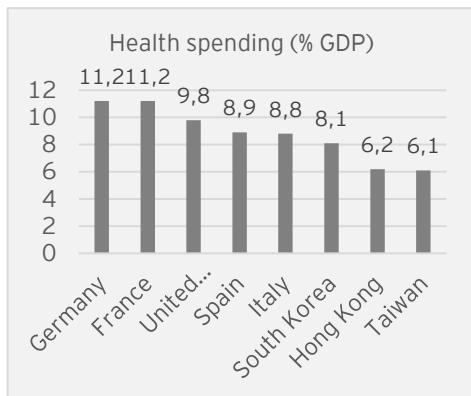
¹⁹¹ “Ecoles, bars, ciné, Hong Kong commence à lever les restrictions”, *Agence France Presse, Journalmétrô*, 5 May 2020, viewed 9 June 2020.

The background features a complex arrangement of purple abstract shapes. A large, thin-lined circle is positioned in the upper left, containing the text. To its right, a smaller solid purple circle is located. Below the large circle, a series of interconnected purple shapes form a larger, organic structure. This structure includes a prominent, large, shaded purple sphere with a gradient from light to dark purple, suggesting a 3D effect. Other smaller solid purple circles and teardrop shapes are scattered throughout the composition, some connected by thin, wavy purple lines. The overall aesthetic is clean and modern, with a monochromatic purple color palette.

Appendices

Appendix 1: Inequalities in the preparedness of the various countries' health services observed from the outset

Germany appears to have been the country best prepared from the outset to deal with the crisis, particularly in terms

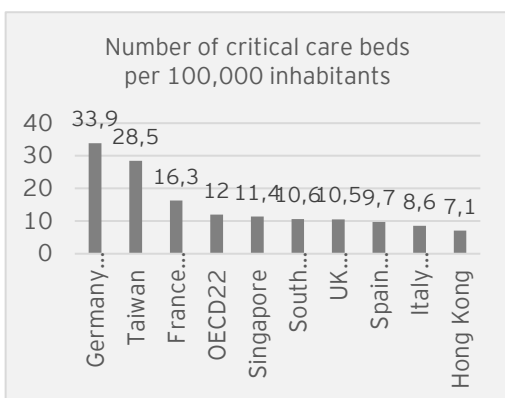


Source: OECD data

of its high level of healthcare expenditure and hospital structure capacity. The percentage of GDP expended on healthcare is one of the highest among OECD countries¹⁹² and it is the European country with the highest number of critical care beds (34 beds per 100,000 inhabitants¹⁹³). France, which is one of the biggest health spenders among OECD countries alongside Germany (3 percentage points higher than South Korea) but which, nevertheless, has over double the number of healthcare facilities compared to Germany, was still faced with a shortage of medical equipment in the most affected regions during the crisis.

The other European health services (Italy, UK and Spain), weakened by the austerity policies applied in the wake of the 2008 financial crisis, appear to be less robust in their ability to cope with the epidemic from the outset. According to OECD data, health spending as a percentage of

GDP in Spain and Italy is around 2 percentage points below the levels of France and Germany. Italian health spending amounted to €2,483 per inhabitant in 2017 (15% below the EU average¹⁹⁴). In the UK, during the decade that followed the 2008 financial crisis, health spending increased by an average 1.4% per year compared to a historical average of 3.7%¹⁹⁵.



Sources:

- OECD report "Beyond Containment: Health systems responses to COVID-19 in the OECD", April 2020.
- Jason Phua et al., "Critical Care Bed Capacity in Asian Countries and Regions", *Critical Care Medicine*, January 2020.

The greatest weakness among these European countries from the outset is exemplified by the number of critical care beds, including intensive care unit (ICU) beds (8.6 in Italy, 9.7 in Spain and 10.5 in the UK), well below the number in France (16.3) and Germany (33.9).

This data needs to be qualified, however, in particular with regard to Italy where the most affected region, Lombardy, boasts one of the most efficient health services in the country (having public and private hospitals long considered to be a paradigm of excellence in Europe). Notwithstanding, the COVID-19 epidemic ravaged north Italy, showing that a well functioning hospital system was not sufficient to prevent the spread of the epidemic in the absence of appropriate measures adopted by the government. The same goes for Spain, where the strength of the health service can be seen in the figures for life expectancy at birth, the highest among the European countries, and the high number of doctors (3.9 per 1,000 inhabitants) compared to the other European countries.

Among the Asian countries, Singapore is a striking example of the preparedness of the health service before the pandemic. This is due to the fact that the country capitalised on the lessons drawn from

the SARS epidemic in 2003-2004. Following the SARS epidemic, Singapore made preparations for future epidemics by reorganising public hospitals (including the obligation to set up isolation wards in each hospital and increasing the

¹⁹² "Health spending", OECD data, 2018.

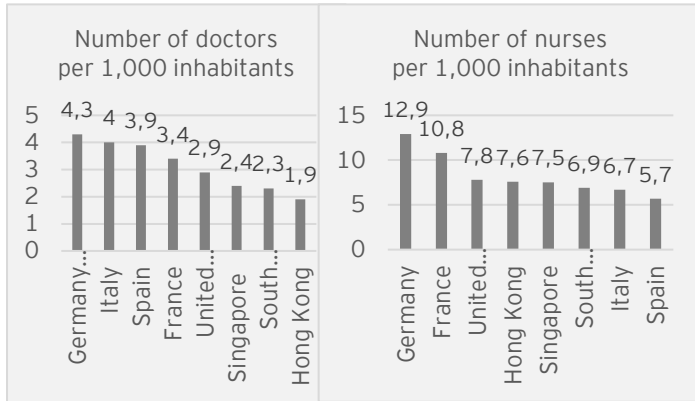
¹⁹³ Ibid.

¹⁹⁴ Italy: Country Health Profile 2019, OECD, 2019.

¹⁹⁵ Alexandre Robinet-Borgomano, "Les Etats face au coronavirus - Le Royaume-Uni, un laissez-faire coûteux", *Blog de l'Institut Montaigne*, 28 April 2020.

capacity of intensive care units¹⁹⁶).

¹⁹⁶ Yeh Woei Chong, "Covid-19: la méthode singapourienne expliquée par l'un des médecins en chef de la cité Etat", *Atlantico*, 15 April 2020.



Source: OECD and World Bank data.

Lastly, it may be stressed that, despite the robustness of the German health service in face of the COVID-19 pandemic, like other European countries including Italy¹⁹⁷ the country was faced with a shortage of skilled medical staff that could only be partly resolved during the crisis, namely by adopting the exceptional solution of deploying reserve staff (medical students, retired doctors and nurses, migrants holding medical qualifications)¹⁹⁸.

¹⁹⁷ Olivier Tosseri, "Coronavirus: le système hospitalier italien en danger", *Les Echos*, 5 March 2020.

Olivier Tosseri, "La Vénétie va faire des médecins roumains pour pallier le manque de personnel dans ses hôpitaux", *Les Echos*, 25 April 2020.

¹⁹⁸ Ibid.

Appendix 2: Government responses to the social implications of the crisis

The economic and social impact of the COVID-19 epidemic was exacerbated by the lockdown measures imposed by the various countries, which concerns all the European countries under review except for Germany. Economic activity was severely penalised by the closure of non-essential businesses and restrictions of movement. In the Asia-Pacific countries that did not impose total lockdown, economic activity also slowed considerably, mainly due to the decline in exports.

Border closures and the suspension of air traffic had an unprecedented impact on the tourist industry. This industry sustains millions of jobs, particularly in France, Italy and Spain where tourism accounts for 7%, 11% and 6% of GDP respectively compared to the OECD average of 4.4%¹⁹⁹. The COVID-19 epidemic is therefore liable to have a strong impact on these countries' employment markets: the sector accounts for around 8% of jobs in France and Italy and 13% in Spain, compared to the OECD average of 6.9%²⁰⁰.

To support their economies and encourage a rapid recovery, the governments of the various countries under review adopted emergency measures to sustain economic activity. Measures adopted by all the countries include government funding of furlough and short-time working schemes and credit facilities for businesses to limit the risk of payment default.

→ Measures to support furlough schemes implemented by companies were seen as a means of reducing layoffs and supporting household consumption.

To limit the impact of the limitation or total stoppage of activity for a long period, governments without exception opted for exceptional budget measures to provide income support to the population. These measures had a dual purpose: (i) support businesses that might not have sufficient cash to pay their salaries, by facilitating access to furlough schemes, and (ii) guaranteeing payment of at least part of each household's income in order to maintain their spending power.

Various systems were used to help businesses implement furlough schemes for their employees. Such measures were widely deployed in Europe from the outbreak of the crisis: 12.9 million employees in France were covered by the furlough scheme (*chômage partiel*) from March to May 2020²⁰¹, 7.5 million in the UK via the Job Retention Scheme²⁰², Spain provided wage subsidies to help avoid layoffs (€3.4 billion) and 725,000 businesses in Germany filed applications to implement furlough schemes.

Similar measures have been adopted in the Asia-Pacific countries: on 31 March South Korea adopted income support measures by paying up to USD 820 per household, while Singapore provided a USD 565 million (SGD 800 million) COVID-19 support grant for employees who lost their jobs or had their income reduced²⁰³ and Hong Kong adopted its Employment Support Scheme totalling USD 10 billion²⁰⁴. Taiwan stayed relatively unscathed, posting an unemployment rate of 4.03% at end May 2020²⁰⁵.

¹⁹⁹ OECD Tourism Trend and Policies, 2020.

²⁰⁰ Ibid.

²⁰¹ William Plummer, "12,9 millions de personnes ont été couvertes par le chômage partiel en France", *Le Figaro*, 27 May 2020.

²⁰² Patrick Collinson, "UK furlough Q&A: All you need to know about the coronavirus job retention scheme", *The Guardian*, 13 May 2020.

²⁰³ ["How the Fortitude Budget 2020 will support Singapore's workers"](#), A Singapore Government Agency Website, 26 May 2020.

²⁰⁴ "Government to launch series of job retention and job creation measures to alleviate worsening employment", Press Releases of the Government of the Hong Kong Special Administrative Region, 20 April 2020.

²⁰⁵ Kao Shih-ching, "Unemployment rate climbs to 4.03%", *Taipei Times*, 23 May 2020.

→ **Governments also widely resorted to state-guaranteed loans for businesses and charge relief in an attempt to limit the risk of bankruptcy.**

In France, €57 billion in state-guaranteed loans were granted to 350,000 businesses between 25 March and the beginning of May 2020. In England, businesses were authorised to contract state-guaranteed bank loans for an amount up to 70% of their turnover, capped at €57,000, at a maximum interest rate of 2.5%. In Spain, the government decided to defer the filing of a number of tax returns for SMEs and self-employed persons, representing a total amount of €14 billion. Germany set up a €50 billion solidarity fund for micro-enterprises. In South Korea, the government authorised businesses to defer their social security payments by three months and granted small businesses 30% relief together with a nine-month moratorium on tax payments and a one-year moratorium on local taxes.