

COVID-19: Countering the Pandemic

SOLACE GLOBAL

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Key Judgements

- Evidence suggests that social distancing and contact tracing measures can be effective at slowing the spread of COVID-19. These measures alone, however, are not sufficient to eliminate the threat posed by the virus.
- Efforts are underway in a number of countries to develop a COVID-19 vaccine. Despite trials advancing at record speed, it is unlikely that a vaccine will enter the market in 2020. However, it is possible that a stopgap measure will be available within six months.
- Widespread antibody testing is being pursued by a number of governments. These tests may allow for countries to increase economic activity in the short term.
- Several treatments for COVID-19 are in development across the globe. These treatments may be pivotal in preventing healthcare systems from becoming overwhelmed.

Summary

With the global COVID-19 pandemic exceeding 1.3 million confirmed cases, scientific and governmental efforts are underway across the world to counteract the threat posed by the virus. Social distancing measures, whilst effective in the short term, are not a long-term solution to the crisis. Ultimately, mass testing of the population, effective therapeutic treatments and a program of large-scale vaccinations represent a path through the pandemic that is not accompanied by a catastrophic loss of life or total economic collapse.

Social Distancing

The experiences of several East Asian countries, such as China and South Korea, indicate that a regime of aggressive diagnostic testing, contact tracing, and extreme social distancing can significantly slow the COVID-19 infection rate. The unanswered question is whether, once these measures are relaxed, the virus will once again spread rapidly.

These restrictive measures, which have been deployed across the globe, are primarily focused on slowing the spread of COVID-19, thereby preventing healthcare systems from becoming overwhelmed by large amounts of patients requiring intensive care unit (ICU) treatment at any one time. Epidemiologists believe that these measures, while easing the pressure on healthcare systems, will likely lengthen the time period of the pandemic. This effect is widely referred to as “flattening the curve.”

Singapore, which had won initial praise for its early response to the virus, has sustained an uptick in new cases of COVID-19, indicating the threat of a “second wave”. In response, the government has indicated that it will incrementally enforce stricter lockdown measures in the coming weeks.

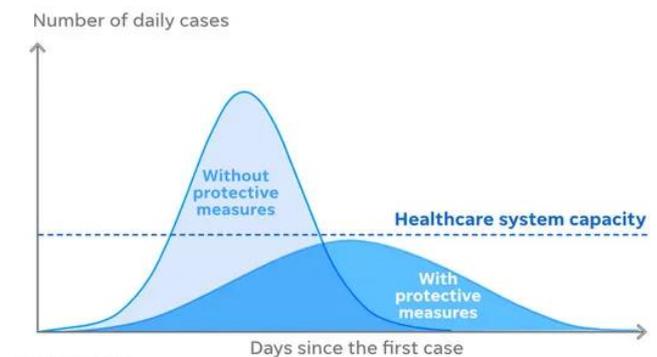
The next step in handling the crisis is at the top of many policymakers’ agendas with businesses shuttered, stock markets in free fall and aircraft grounded. For example, experts in the UK have recently begun to discuss how the country will extract itself from current lockdown measures. The consensus seems to indicate a strategy involving the gradual loosening of social distancing, coupled with mass testing and tracing of those confirmed to have the virus. However, the UK has found increasing its testing capacity a difficult task.

China has begun to ease restrictions that had been imposed to curb the spread of COVID-19. Though the reported cases of the virus have plummeted in recent weeks, officials remain wary that the virus will re-emerge. The communist party chief in Wuhan has indicated that the risk to the city remains high despite a gradual restarting of normal life.

The nervousness around the easing of restrictions underlines the fact that lockdown measures in themselves do very little to eliminate the threat posed by the virus. Countries currently struggling with a high number of COVID-19 cases are likely to closely monitor the Chinese experience in the coming weeks to decide when or how to ease restrictive measures. This is why many politicians have accused China of being less than truthful regarding its true case numbers, making it hard for them to confidently set their own domestic policies.

Flattening the curve

Mitigation efforts can help to reduce the number of daily cases and to reduce the pressure on the healthcare system



SOURCE: CDC

These numbers represent a decisive factor for the international community because, should China experience a second wave of cases, it is likely that governments worldwide will be forced to maintain restrictive distancing or lockdown measures, at least until an effective treatment or vaccine becomes readily available.

Antibody Testing

Despite large-scale testing for COVID-19 in some countries, the chances that every infection will be recorded are next to zero. This is due to the vast majority of those infected displaying only mild symptoms or no symptoms at all. According to Robert Redfield, the director of the Centers for Disease Control and Prevention (CDC), as many as 25 percent of people infected with COVID-19 will be asymptomatic. These individuals, however, are still able to transmit the virus to others. It is these asymptomatic carriers who are most likely to be contributing to the rapid spread of the virus.

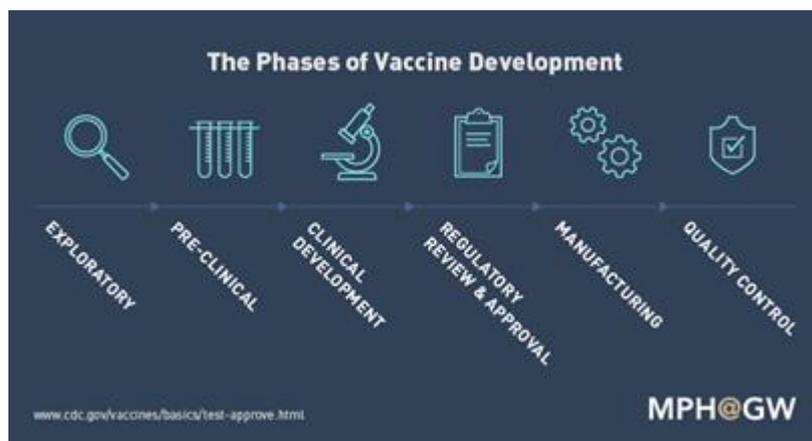
In several countries, efforts are underway to identify members of the population who have contracted the virus and have since recovered. Due to their likely immunity to the virus, these individuals are thought to be key to restarting economic activity. Governments have acquired, or are in the process of procuring, large numbers of at-home test kits that can be distributed throughout the population. In general, these kits involve testing a small amount of blood, acquired through a finger-prick, and determining whether the individual possesses the antibodies that combat COVID-19. However, no test has yet been proved to be sufficiently accurate for distribution to the general public.

Officials in both Germany and the UK have shown interest in introducing 'immunity passports.' Such documents would be issued to individuals who have immunity to the virus and would exempt them from a number of restrictions aimed at slowing the spread of the virus. Should large-scale and accurate antibody testing become viable, it is likely that a growing number of countries will be able to ease restrictions and increase economic activity in the coming months.

Vaccine

Even if the virus is brought under control, COVID-19 will remain a serious threat until a degree of 'herd immunity' is achieved. Whilst this can be achieved by allowing the virus to infect large amounts of people, this approach would likely lead to the deaths of millions of vulnerable and immunocompromised individuals across the world. However, herd immunity can also be obtained through widespread vaccination. In the past, diseases such as smallpox and polio have been practically eradicated by mass vaccination.

There are currently dozens of efforts underway worldwide to develop an effective vaccine to combat the current outbreak. Generally, it takes several years to develop an effective vaccine and bring it to market, although the process can take significantly longer and is not always successful. Notably, researchers have been attempting to develop a vaccine to counter the Human Immunodeficiency Virus (HIV), since the 1980s. Indeed, it is only in recent years that significant progress in the treatment of the virus have been made.



According to the World Health Organisation, there are dozens of candidates for possible COVID-19 vaccines. Of these candidates, several have skipped a potential animal testing phase and have moved to initial human trials. These trials are seeking to establish the safety of candidate vaccines and if they provoke a response from the immune system. Several of these candidate vaccines also use pioneering technologies that generate an immune response in the human body without administering a form of the virus itself.

There are also indications that the development timeline of a potential vaccine can be accelerated, with some consequences. For example, medical regulators could cease all other work in order to fast-track an approval decision. Also, if confident that the candidate vaccine is producing the desired results, with limited side effects, manufacturers could prepare large quantities in anticipation of receiving regulatory approval, though incurring considerable financial risk.

There are stages of development, however, that cannot be accelerated, such as researching potential side-effects. Though there has been academic speculation that a vaccine could become available within six months, general scientific consensus indicates that, even on an accelerated timeline, a vaccine will not become available for at least 12 months.

Therapeutic Treatment

Currently, there are no proven therapies for treating COVID-19. Medical experts in a number of countries, however, are exploring possible therapeutic treatments of the virus. A number of options, including some readily available medications, have been touted as a possible treatment for the virus, with some showing initial promise and others quickly being dismissed. With studies on therapies underway across the globe, an effective non-invasive treatment for COVID-19 would likely be a key component of reducing the pressure on healthcare systems, particularly ICUs.

Scientists in Germany are currently exploring a therapy using an enhanced tuberculosis vaccine that would boost general immunity to infectious respiratory diseases. The candidate vaccine, known as VPM1002, is not specifically targeted at COVID-19 and is unlikely to be a full vaccine, but it is thought that it reduces the severity of infections and the overall death rate attributable to the virus. A study into the efficacy of VPM1002 is currently awaiting peer review. However, researchers believe that VPM1002 could act as a stopgap to reduce the severity of the pandemic whilst a vaccine targeted specifically at COVID-19 is developed. Due to its similarity to the BCG vaccine and modern manufacturing techniques, VPM1002 could be available for use in as little as six months should it receive approval from regulators.

Elsewhere, in the United States, the Food and Drug Administration (FDA) has approved plans for nationwide trials of two COVID-19 treatments. The therapeutic agents, convalescent plasma and hyperimmune globulin, are both derived from the blood of people who have recovered from the virus. The use of blood from people who have already recovered from a disease is a well-established approach and has seen some success in the past, notably in the fights against COVID-19's sister diseases, SARS and MERS. Preliminary studies have shown this to have been a somewhat successful approach to treating the virus.

Promisingly, the FDA also has a well-established fast-track process for approval of therapies that fill an unmet medical need within 60 days. Should treatment with blood products prove a successful approach, the method would likely receive full approval from the FDA by early June.

There has also been some speculation surrounding existing, readily available drugs that may prove an effective treatment for COVID-19. Indeed, US President Donald Trump has repeatedly implied that the antimalarial drug hydroxychloroquine can be taken to treat the virus. In fact, some US hospitals have been giving hydroxychloroquine to patients, on the basis that it might help without creating additional complications, due to the relative lack of side-effects. However, more studies are required to determine the drug's safety and efficacy in the treatment of COVID-19 patients.

Trials are also underway to determine whether drugs and drug cocktails used to treat conditions such as erectile dysfunction and HIV are an effective treatment for COVID-19. However, these will also take time, time that many do not have. This means that social distancing and mass lockdowns are likely to stay in place for at least a little while longer.

Conclusion

None of the options illustrated above offer an immediate solution to the current crisis. Governments are still waiting to determine the effect of social distancing and quarantine measures, with Italy and Spain showing some positive developments. While this represents a viable solution in the short term, an extended lockdown cannot be economically sustained.

Testing is the next logical step in combating the virus and helping us return to normal life. The development and affordable distribution of an antibody test would greatly help countries across the globe in allowing a partial lift to the quarantine, which would help restart many businesses. Widespread diagnostic testing, as seen in Taiwan and South Korea, would also help in countering the pandemic's spread.

Ultimately, however, life is unlikely to return to normal until an effective vaccine or therapeutic treatment are discovered. Until then, countries around the world will continue to face economic uncertainty as billions remain locked indoors.