



COVID-19 Global Trends and Analyses

Island countries
Pandemic fatigue
Declining death rates

October 2020 | Update 2

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SUMMARY

COVID-19 GLOBAL TRENDS AND ANALYSES | 7 – 21 October 2020

- The **global** total number of reported cases has surpassed 41 million and 1.13 million deaths as of 20 October.
- The situation in **Europe** is worsening, as almost all countries are experiencing second waves of COVID-19 cases. The UK, France, Czech Republic, Belgium, Slovakia and Spain have all reported record numbers of daily new cases. Lockdowns are being reintroduced across the continent. **Spain** is the fifth country in the world, and the second in Europe after Russia, to report more than one million cases.
- In the **United States**, the number of cases has surpassed 8.5 million and the death toll has surpassed 226,000. Over the past two weeks, only two of the 50 states have reported downward trends in new daily cases.
- **India's** epidemic has slowed over the past two weeks. Daily new cases have declined from a peak of 98,000 on 16 September to 46,000 on 19 October. The country has recorded almost 8 million cases and more than 115,000 deaths, the third highest in the world after the US and Brazil.
- **Indonesia's** case numbers continue to grow reporting more than 4,000 new cases daily.
- **Myanmar** has reported 38,502 cases and 945 deaths (CFR 2.5%); cases have been stabilising in the past 2 weeks. Cases of COVID-19 have been confirmed in Yangon, Mandalay, the capital, Naypyitaw, and 13 of the country's 14 states and regions.
- Since the last update, **Victorian** daily case numbers have continued to decline, reporting just one case in Melbourne on 20 October. The number of active cases was 122 on 20 October of whom ten (8.2%) are healthcare workers and nine (7%) are aged care facility residents. The 14-day rolling average of daily cases is 6.2 in Melbourne and there have been 10 cases of unknown origin in the past 14 days.

Island Countries

- During the first phase of the pandemic, most island countries were relatively protected from major spikes of cases. Ten Pacific Island countries have still not reported a single case of COVID-19.
- **Taiwan and Mauritius** have not reported a locally acquired case in the past six months.
- Countries that have experienced modest waves of cases include **New Zealand, Haiti, Iceland, and Cuba**.
- The worst affected island countries have been **Jamaica and Maldives**.

Pandemic Lockdown Fatigue

There are many factors that contribute to a sense of fatigue regarding lockdowns including loss of income and social disconnection. It is a natural and expected response to a continued crisis that can then lead to reduced trust in authorities, decreased perceptions of risk and increased complacency. These outcomes can prove severely detrimental to the implementation of effective public health measures.

The WHO Regional Director for Europe, Dr Hans Kluge, has proposed 3 strategies for preventing the levels of fatigue from increasing:

- 1. Take the pulse of the community regularly, and use what you find**

Policy must be driven by the growing body of evidence that we have on behaviour and fatigue. We should address individual experiences and cultural nuances to shape more effective response strategies. Engage expertise **beyond the medical and public health sectors** to discuss measures and restrictions.

- 2. Co-create WITH the community - recognise the community as a rich resource**

Consultation, participation, and acknowledgement of hardships must occur between authorities and their communities. Policy makers should work with citizens to formulate responses. Communication should be tailored to specific groups that experience demotivation.

- 3. We need to meet our needs in new, innovative ways**

Creative approaches can restore social pleasure while protecting communities. Innovations such as floating cinemas, reformatted cultural events and social bubbles can balance protecting the community with social needs.

Declining Death Rates

- It is clear that global COVID-19 case fatality ratios (CFR) have been declining since the first few months of the pandemic. The global CFR declined from 3.5 per cent in March and April to just 1.5 per cent in the week of 4-10 October.
- A report by American and Chinese researchers found that 80 per cent of 53 countries and regions estimated lower CFRs in the disease's second wave. In addition, local longitudinal studies in a number of countries have confirmed this trend.
- In Europe, there are signs that this trend is reversing with a fourfold increase in deaths since early September.
- Explanations for this trend include the **younger demographic profile** of cases in the second wave, **improved clinical management practices**, and **broader testing**. In addition, there is increasing evidence that over time the **viral load** of new identified cases has been decreasing. This may be due to wider adoption of mask wearing and physical distancing.

GLOBAL EPIDEMIOLOGY AND TRENDS

The **global** total number of reported cases has surpassed 41 million and 1.13 million deaths as of 20 October¹. The number of new daily cases has been trending around 400,000.

European Region

- Countries across **Europe** are seeing resurgences in COVID-19 cases after successfully slowing outbreaks earlier in the year. Many countries — such as Albania, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Greece, Hungary, Montenegro, the Netherlands, North Macedonia, Poland, Romania, Russia, Slovenia, Slovakia, Spain and the UK — are seeing much higher case numbers in September than they did earlier in the year².
 - **Spain** is the fifth country in the world and the second, after Russia, in Europe to report more than one million cases.
 - The **UK** reported an all-time high of 26,688 cases on 21 October.
 - **Deaths in Europe** have been steadily increasing from around 2,000 per week in late August to around 8,000 late October.
 - The **UK** reported 241 new deaths on 20 October, the highest since 5 June.
 - Overall, 1,539 people are now in intensive care across **France**, which has a total capacity of some 5,000 beds – at the height of the crisis last April, more than 7,000 patients were in intensive care, some in emergency military field hospitals.
 - **Paris, Marseilles, Lyon, Rome and Brussels** have introduced night curfews.
 - **Ireland** has reimposed a strict Stage 5 national lockdown.
- Other countries, like **Austria, Finland, Germany, Iceland, Ireland, Italy, Portugal and Switzerland** are experiencing second waves equal in scale to their first waves. All are re-introducing various forms of restrictions, including mandating face masks in public, and closing bars and restaurants in some regions.
- A few countries, such as **Belarus, Estonia, Norway, and Sweden** have reported modest surges in new cases. Although Sweden's second wave began later than most other European countries, it is now reporting up to 900 new cases daily and contemplating new restrictions.

¹ <https://www.worldometers.info/coronavirus/#countries>

² <https://www.euronews.com/2020/09/28/is-europe-having-a-covid-19-second-wave-country-by-country-breakdown>

The Americas

- In the **United States**, the number of cases has surpassed 8.5 million and the death toll has surpassed 226,000. Over the past week, the US has averaged about 59,000 new cases a day, the most since early August, representing a major third surge. The US is once again reporting the highest number of daily cases in the world as India's cases decline. As of 19 October, 16 states had added more cases in the prior week than in any other seven-day period. In Ohio, more people are hospitalised with COVID-19 than at any other time during the pandemic. Only two of the 50 states are reporting downward trends.
The US CDC has reported that there were almost **300,000 excess deaths** between January 26 and October 3, around 70,000 more than the official death toll from COVID-19. The largest percentage increases were seen among adults aged 25–44 years and among Hispanic or Latino persons³.
- **Canada** is experiencing a clear second wave with new cases focused in the large cities of Montreal and Toronto. Total cases have exceeded 200,000 and new case counts are between 2,500 and 3,000.
- Six **Latin American** countries – Brazil, Colombia, Peru, Argentina, Mexico and Chile – account for 25% of global COVID-19 cases. Despite one of the world's longest lockdowns, reported cases in Argentina continue to surge reaching 17,000 per day. **Argentina** is the sixth country in the world to surpass one million reported cases.

Asia-Pacific Region

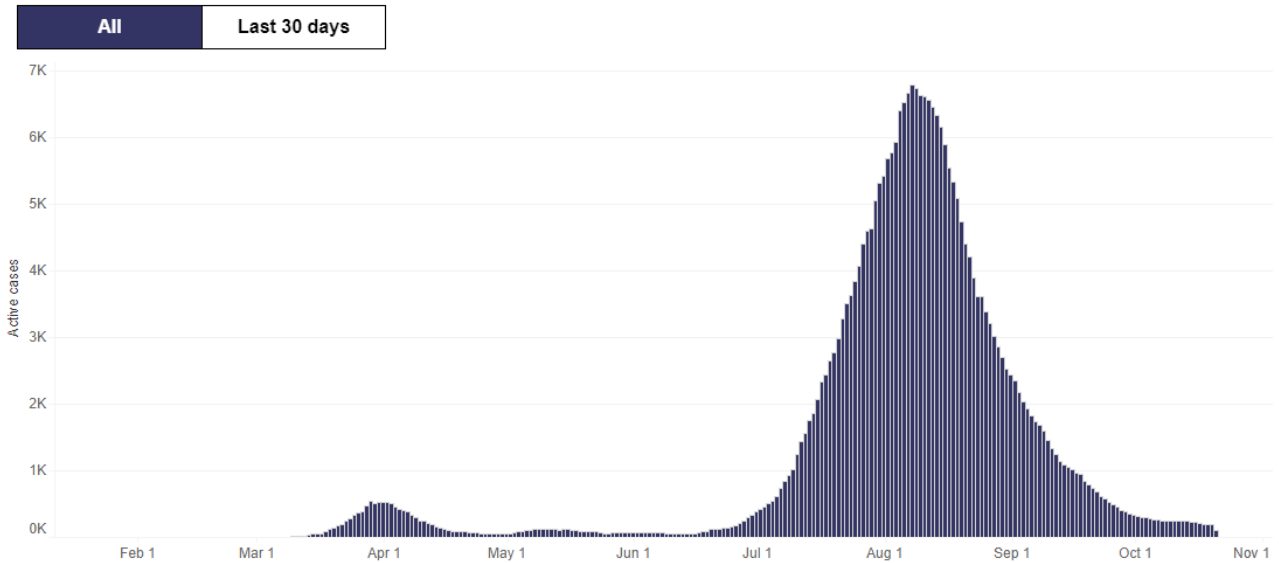
- **India's** epidemic has slowed over the past two weeks. Daily new cases have declined from a peak of 98,000 on 16 September to 46,700 on 19 October, the lowest number in three months. The country has recorded almost 7 million cases and more than 115,000 deaths, the third highest in the world after the US and Brazil. The fatalities are primarily concentrated in the large cities such as Mumbai, Delhi and Chennai. The Indian Prime Minister has warned about the dangers of large gatherings during the upcoming Hindu festivals of Durga Puja and Diwali.
- **Indonesia's** case numbers have shown no signs of slowing down and continue to report more than 4,000 new daily cases on most days since 19 September. New cases and deaths are exploding in **Bali**, which has reported almost 11,000 cases, most since early September when the island opened up to tourists from other parts of Indonesia.
- Daily new cases in the **Philippines** have been in steady decline after a new lockdown was imposed in Metro Manila – down from around 5,000 in mid-September to around 2,500 in late October.
- **Myanmar** has reported 38,502 cases and 945 deaths (CFR 2.5%); cases have been stabilising in the past 2 weeks. Cases of COVID-19 have been confirmed in Yangon, Mandalay, the capital, Naypyitaw, and 13 of the country's 14 states and regions.
- **Papua New Guinea** has reported 581 cases and seven deaths. During the past two weeks, 40 new cases have been recorded.

³ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6942e2.htm>

Australia

- Since the last update, the **Victorian** daily case numbers have continued to decline. The number of active cases was 122 on 21 October of whom ten (8.2%) are healthcare workers and nine (7%) are aged care facility residents.
- To trigger the next stage of release from lockdown, Metro **Melbourne** must continue to average fewer than five cases over a period of 14 days. On 21 October that number was 6.2. A further metric is zero cases of unknown source of infection. In the past 14 days there have been ten such cases in Melbourne.

Active cases in Victoria



GLOBAL PERSPECTIVE | ISLAND COUNTRIES

What is an Island Country?

The UN recognises 58 small island developing states and territories, with 29 in the Caribbean, 20 in the Pacific, and 9 in the Atlantic Ocean, Indian Ocean, and South China Sea⁴. Madagascar is not included as it is not considered to be “small”. Hispaniola in the Caribbean consists of two separate independent states – Haiti and the Dominican Republic.

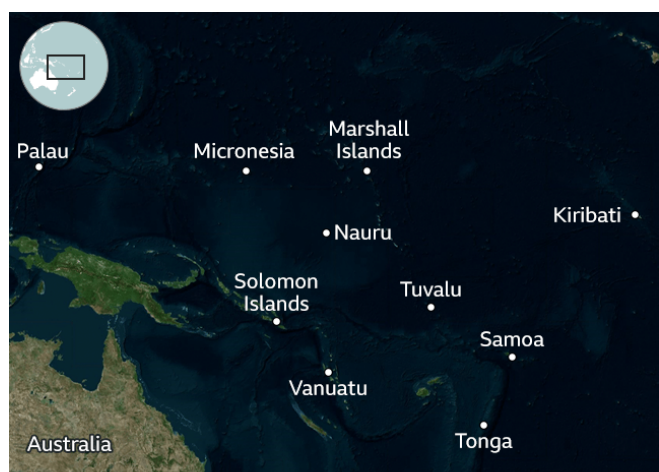
Not included in this classification are a number of high-income countries, including Iceland, the UK, Ireland, Malta, Cyprus, Bahrain, Taiwan, and New Zealand. While Australia is considered to be a continent it can also be classified as an island nation. Archipelagos like Japan, Indonesia and the Philippines are not considered island nations.

Island nations have an advantage when it comes to stopping travellers importing disease, be it COVID-19 or other infections. Seas are usually harder to cross than land, and beaches are easier to police. There are no cross-border towns, and fewer ways to sneak over frontiers. These advantages, combined with strict quarantine policies, have made island nations some of the most successful at containing COVID-19. But the ones that did best had shut themselves off from the world to varying degrees.

Not Directly Affected At All

The Ten Pacific countries have not recorded a single case of locally acquired infection. They are Palau, Federated States of Micronesia, Marshall Islands, Nauru, Kiribati, Solomon Islands, Tuvalu, Samoa, Vanuatu and Tonga. However, the economic costs have been high.

For example, the Asian Development Bank expects Vanuatu’s GDP to fall by almost 10 per cent – the biggest drop since independence in 1980. Expected declines in GDP in other countries include 9.5 per cent in Palau, 6 per cent in Solomon Islands, 5.5 per cent in Marshall Islands, 5 per cent in Samoa, and 3 per cent in Tonga⁵. Smaller, specific cross-border travel may help Vanuatu. The government recently allowed 172 workers to travel to the Northern Territory in Australia for six months to pick mangoes. While the remittances will help, they are not enough in a country where 35 per cent of GDP comes from tourism⁶.



Pacific islands remain free of coronavirus ^{BBC}

⁴ <https://sustainabledevelopment.un.org/topics/sids/list>

⁵ <https://www.adb.org/sites/default/files/publication/622976/pem-july-2020.pdf>

⁶ <https://www.bbc.com/news/world-asia-53831063>

Moderately Affected

Taiwan | Moderately Affected

530 cases
7 deaths
24 million population

Taiwan's experience of SARS meant it was prepared to act fast. In February it banned visitors from China, and in March it expanded that ban to the rest of the world. It was one of the first places where life returned to something like normal. Now, all new arrivals spend two weeks in quarantine – non-residents in designated hotels, where they stay in one room, with a “digital fence” monitoring their location, and regular check-ins about health and temperature required. Taiwan has not reported a single case of local transmission since 12 April.

Mauritius | Moderately Affected

407 cases
10 deaths
1.3 million population

Mauritius is one of the few countries that hasn't seen a local transmission for six months, thanks largely to an extremely strict quarantine regime. Borders were sealed in March, and apart from Mauritians stranded abroad, remain closed. Every new arrival has quarantined for 14 days. The shut-down devastated the tourism industry, and authorities are working on reopening, possibly with airport testing for all.

New Zealand | Moderately Affected

1,876 cases
25 deaths
4.8 million population

New Zealand is one of the few countries to openly declare a COVID-19 elimination strategy. This involved a progressively strengthened contact-tracing and isolation system, with early and stringent use of shutdowns and border controls. Stringent border controls helped New Zealand eliminate COVID-19 within three months. The government sealed its borders to all but its own citizens in March and has kept them closed with a handful of exceptions. All new arrivals must spend two weeks in quarantine, originally paid for by the government but now self-funded. The country declared itself COVID-free in June, and until August the few new cases identified were among travellers in quarantine. However, in early August, a new cluster emerged in Auckland, with 292 additional cases reported so far. Authorities have not been able to trace its origin; tests so far show it is not linked to either the March-April outbreak or the known imported cases.

Other Pacific Islands and Territories | Moderately Affected

Solomon Islands
Commonwealth of the
Northern Marianas
Papua New Guinea
Fiji
French Polynesia
Guam
New Caledonia

As of 13 October 2020, seven countries (Solomon Islands, Commonwealth of the Northern Marianas, Papua New Guinea, Fiji, French Polynesia, Guam and New Caledonia) in the PICTs have reported 7,124 cases and 82 deaths, with a case fatality proportion of 1.2 per cent. The one case in Solomon Islands is imported. Between 6 and 13 October 2020, 1,405 new cases (1 in Solomon Islands, 2 in CNMI, 24 in PNG, 961 in French Polynesia, and 417 in Guam) were confirmed in the PICTs and 7 new deaths (2 in French Polynesia and 5 in Guam) were confirmed in the PICTs. Fiji has not reported any cases for at least two incubation periods (28 days). New Caledonia has not reported any cases for at least one incubation period (14 days).

Iceland | Moderately Affected

3,757 cases
10 deaths
342,000 population

In contrast to New Zealand, Iceland's strategy involved no shutdown period, no official border closure to non-residents, and negligible use of managed quarantine facilities. The aim instead is to mitigate infection so it does not overwhelm the health-care system, and to keep the numbers as low as possible. The cornerstone of Iceland's response has been easy access to COVID-19 testing and mass screening, alongside quarantine and contact tracing. This was enabled by a public-private partnership between the Icelandic health authorities, the National University Hospital of Iceland and local biopharmaceutical company deCODE Genetics. At one stage, Iceland was performing more tests per head of population than any other country. However, after four months of single digit new daily cases, there has been a significant second wave with up to 100 new cases per day.

Severely Affected

The United Kingdom, Ireland, Malta and Cyprus are not included in this analysis because of their close links with continental Europe and the large movements of people across European borders, especially during the northern summer.

Dominican Republic | Severely Affected

121,667 cases
2,203 deaths
10.6 million population

The Dominican Republic's cumulative incidence rate of 1,118 per 100,000 is the highest in Central America and the Caribbean. The country has had a prolonged first wave reaching highs of 2,000 cases per day in late July and early August. The virus was introduced by a traveller from Italy in February and was followed by a superspreading event at a wedding attended by a number of dignitaries, including the Chancellor's son who infected his father. While a state of emergency was declared, movements restricted, and masks mandated, a nationwide curfew was not imposed until 28 September. Although cases have declined it is still reporting 400 to 600 daily cases.

Haiti | Severely Affected

8,976 cases
231 deaths
11.1 million population

While Haiti shares the island of Hispaniola with the Dominican Republic and has a similar sized population, the cumulative incidence is much lower at 78 per 100,000. Unlike the Dominican Republic, cases did not begin to increase in Haiti until mid-May giving it time to prepare. Many cases were Haitians who had returned from working in badly-affected Dominican Republic. Daily cases reached a peak of 330 in mid-June then began a steady decline. For the past month, 20 to 40 new daily cases have been reported. The first case of COVID-19 in Haiti was reported on 19 March. The Government stopped commercial passenger flights, mandated a 14-day quarantine for visitors, banned public gatherings, closed schools and factories, and asked people to wear masks. However, complete lockdowns were not implemented. Many reasons have been given for the relatively low number of cases – low testing rates, crowded but well-ventilated dwellings and a young population.

Jamaica | Severely Affected

8,321 cases
173 deaths
2.9 million population

In March, as the coronavirus spread rapidly across the world, Jamaica's government closed its borders to prevent a spike in infections and deaths, and it worked. The drastic move successfully limited the spread of the virus in the country, but it brought its economy to a standstill. On 15 June, Jamaica reopened its borders to tourists. After the arrival of more than thirty-five thousand people, numbers of cases spiked in mid-August reporting up to 250 new cases daily. The incidence of COVID-19 in Jamaica is now 280 per 100,000, much higher than Haiti. This was a clear example of a country having to ease travel restrictions in the face of economic ruin.

Cuba | Severely Affected

6,258 cases
127 deaths
11.3 million population

Cuba's cumulative incidence rate of 58 per 100,000 is relatively low; however, it has experienced two distinct waves and the second wave shows little sign of abating. While the highest number of daily cases during the first wave was 75, in the second wave it has approached 100 on numerous days. During the first wave, Cuba's health system's strengths—widespread surveillance, large numbers of health care workers, and generally strong public trust in hospitals—came to the fore. One of the most effective measures in Cuba, as in Wuhan, was centralised quarantine. Cubans showing symptoms of COVID-19 were placed in state-run isolation centres for 14 days, which was a tough measure, but also an effective one to prevent spread within large extended families. In July, Cuba opened up for international visitors from any country, without requiring previous lab tests. Visitors only needed to show health insurance (or buy it at the airport), fill out a health information form, and take a free PCR test upon arrival. After a first night under quarantine at their hotel and a negative test result, they were free to enjoy their stay. By the beginning of August there was a new surge in cases which has not yet subsided. Like Jamaica, Cuba took the risk to reopen to save their tourist-dependent economy.

Maldives | Severely Affected

11,232 cases
37 deaths
516,000 population

Despite its small population and remote location, Maldives has the highest cumulative incidence (2,067 per 100,000) of all the island countries reviewed here. Its first wave between mid-April and mid-June was relatively modest; however, in the second wave daily new cases have reached more than 200 per day. Maldives, on 26 August, **recorded the highest number of daily COVID-19 cases per capita in the entire world**⁷. Cases have declined since then; however, between 30 and 40 new cases are reported daily. The number of COVID-19 cases increased after the state initiated efforts to steer the country towards a 'new normal' with the phased easing of lockdown restrictions across the Greater Malé Region. As one of the most densely populated cities in the world, Maldives' capital Malé continues to record a significant number of COVID-19 cases, similar to the first weeks following the first confirmed local transmission on 15 April. In addition to the health crisis, the pandemic has had a devastating impact on the country's economy, which is heavily

⁷ <https://edition.mv/news/18334>

reliant on tourism. **Tourism makes up 39 per cent of the Maldives' GDP.** In a country that heavily relies on tourism for its income, the recent travel bans from COVID-19 have caused a deceleration in economic growth. In 2019 visitor arrivals increased by 14.7 per cent to a record 1.7 million. Tourism was expected to increase but all visits have been postponed until further notice. According to The World Bank, revenue fell by about 23.4 per cent in 2020's first quarter⁸.

Summary

During the first phase of the pandemic, most island countries were relatively protected from major spikes of cases. Ten Pacific Island countries have still not reported a single case of COVID-19.

In **Dominican Republic** early introductions and superspreading events led to a major first wave with the highest population incidence in Central America and the Caribbean. On the other hand, **Taiwan**, with a population of 24 million, contained transmission very early with a combination of closing borders, active testing and tracing, and universal mask wearing. **Mauritius** was another island nation that controlled virus spread through the same measures. Both Taiwan and Mauritius have not reported a local acquired case for the past six months.

Other island countries that have experienced modest waves of cases include **New Zealand, Haiti, Iceland and Cuba**. However, Cuba has experienced a second wave after the country opened up to international tourists in July and Iceland also has a second wave after keeping its border open during the northern summer.

Perhaps the worst affected island countries have been **Jamaica and Maldives**. Jamaica was largely spared a first wave due to closed borders and strict prevention measures. However, when the country opened to international tourists in June, the country experienced a major second wave. In August, Maldives had the highest daily incidence of new cases in the world. The country, which relies on tourism for 39 per cent of its GDP, has suffered severe economic consequences from the complete shutdown of tourism.

⁸ <https://www.worldbank.org/en/country/maldives/overview>

SOCIAL TRENDS | PANDEMIC FATIGUE

Earlier in the year, we saw many countries around the globe impose restrictions that aimed to limit movement to reduce the transmission of SARS-CoV-2. This blunt public health intervention was able to slow, halt or even reverse increasing case counts, but this came at the cost of various social, economic and community systems. As the potential for further restrictions and lockdowns looms following a concerning surge in Europe, it is important to consider the effectiveness of these interventions in the face of a sense of 'lockdown fatigue'.

There are many factors that contribute to a sense of fatigue regarding lockdowns including loss of income and social disconnection. It is a natural and expected response to a continued crisis that can then lead to reduced trust in authorities, decreased perceptions of risk and increased complacency. These outcomes can prove severely detrimental to the implementation of effective public health measures. As we move out of the early phase of the pandemic, it is incredibly important to develop interventions that can drive sustained behavioural changes which preserve public health guidelines and mitigate any feelings of apathy. In the absence of a vaccine or effective treatments, it is of vital importance that we maintain and optimise the public health responses to COVID-19.

An example of pandemic and lockdown fatigue could be seen in **Israel**, one of the first countries to experience a second wave. The second wave in Israel was largely caused by community transmission among adolescents in schools, and an uncoordinated exit from the first lockdown⁹. By the end of May, citizens were allowed to go to shopping centres and community gatherings, despite a growing resurgence of cases. During the Israeli summer, there was minimal enforcement of face mask use, and restrictions were reimposed in late July. This reimposition prompted protests and rallies in Jerusalem and Tel Aviv¹⁰. The second lockdown was introduced on 18 September and included a restriction on people moving more than 1km from their home¹¹. The mishandling of the first wave had eroded the public's trust in their government, and public morale was seemingly bleaker during the second lockdown¹².

Lack of knowledge and understanding are not the key drivers of fatigue. The feeling of fatigue relates more to emotional and contextual factors. This desensitisation to public health messaging is not only important to those undergoing lockdowns in their homes, but to essential workers who are the front line of the response. A randomised study involving 528 healthcare workers found that for every increase of one public health message a week, there was a 41.2 per cent decrease in the odds of recalling the content of the public health message¹³. A reduction in information recall may impact the effective response in our healthcare systems.

⁹ [https://burnet.edu.au/system/asset/file/4126/7.3-Update -
Global Case Study South Korea Israel Brief.pdf](https://burnet.edu.au/system/asset/file/4126/7.3-Update-_Global_Case_Study_South_Korea_Israel_Brief.pdf)

¹⁰ <https://www.aljazeera.com/news/2020/07/18/israelis-protest-against-netanyahu-govt-handling-of-covid-19/>

¹¹ <https://www.theaustralian.com.au/world/coronavirus-israel-set-to-ease-second-lockdown-as-infections-fall/news-story/af8bbd53f956c9fb82e83afe600bcb0a>

¹² <https://www.nytimes.com/2020/10/04/opinion/israel-coronavirus-lockdown.html>

¹³ <https://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-13-295>

The success in managing fatigue levels lies within a government’s willingness to implement the necessary measures and the public’s willingness to comply over a sustained period of time. According to Dr. Thomas Tsai, a researcher at Harvard University, “the countries that have done well have had sustained surveillance, masking, physical distancing and intermittent shutdowns for six months”¹⁴. In Europe, there is a lack of consensus on the measures governments are taking, as protests stem from the governments either not doing enough or enforcing restrictions that are too strict.

The WHO released a policy framework for supporting pandemic prevention and management in September containing the following figure that showcases the complex interplay between a variety of factors that contribute to fatigue during a pandemic¹⁵:

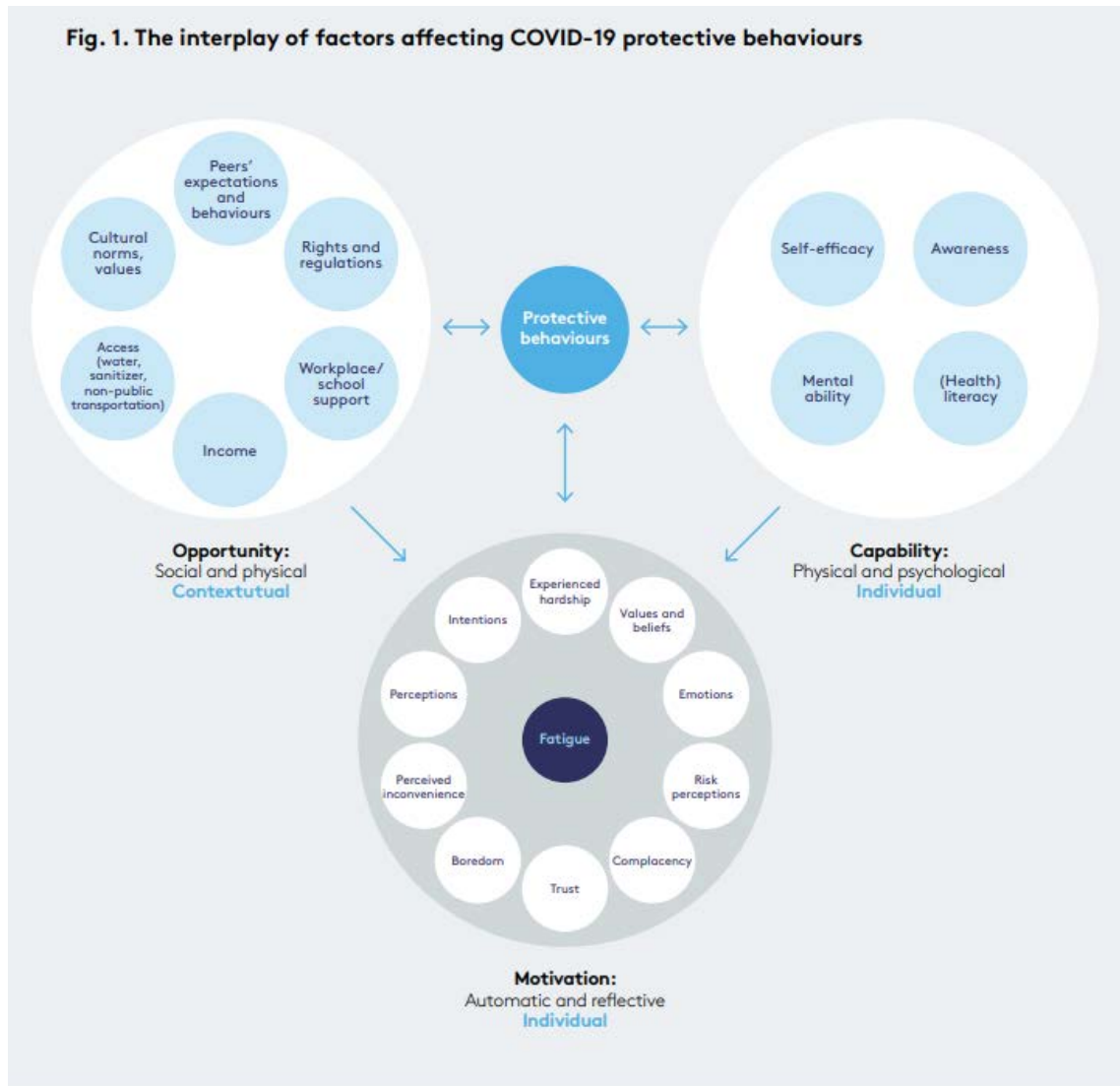


Fig 1. draws on the COM-B model, a widely used theoretical model to understand the factors affecting behaviours (9). It proposes three overall factors that need to be in place for any behaviour to take place: individual motivation (automatic and reflective), individual capability (physical and psychological) and contextual opportunity (social and physical). The subcomponents of each factor can function as barriers to and/or drivers of the behaviour.

¹⁴ <https://www.cnn.com/2020/09/18/pandemic-fatigue-leads-to-resurgence-of-coronavirus-in-europe-where-france-and-spain-hit-records.html>

¹⁵ <https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf>

The framework outlines key strategies for governments, as well as guidance on maintaining and reinvigorating public support for protective behaviours. The WHO Regional Director for Europe, Dr Hans Kluge, has proposed 3 strategies for preventing the levels of fatigue from increasing¹⁶:

1. Take the pulse of the community regularly, and use what you find

Policy must be driven by the growing body of evidence that we have on behaviour and fatigue. We should address individual experiences and cultural nuances to shape more effective response strategies. Engage expertise **beyond the medical and public health sectors** to discuss measures and restrictions.

2. Co-create WITH the community - recognise the community as a rich resource

Consultation, participation, and acknowledgement of hardships must occur between authorities and their communities. Policy makers should work with citizens to formulate responses. Communication should be tailored to specific groups that experience demotivation.

3. We need to meet our needs in new, innovative ways

Creative approaches can restore social pleasure while protecting communities. Innovations such as floating cinemas, reformatted cultural events and social bubbles can balance protecting the community with social needs.

Countries that have mounted a successful response to the waves of infection such as New Zealand and South Korea have been transparent, consistent and have demonstrated clear messaging. The WHO recommends quality messaging that is tailored to key population groups over quantity. Continued work to foster trust between the people and government, and exploration of innovative ways to preserve some aspects of pre-COVID life is key to keeping a sense of fatigue at bay during the pandemic.

¹⁶ <https://www.euro.who.int/en/media-centre/sections/statements/2020/statement-rising-covid-19-fatigue-and-a-pan-regional-response>

SCIENCE AND RESEARCH UPDATES | DECLINING DEATH RATES FROM COVID-19

Trends in Global Mortality | Declining Death Rates

Death rates from the novel coronavirus are lower in hot spots around the world, even as new infections accelerate in what may be the pandemic's next wave. Scientists are confident the change is real, but the reasons for it — and whether it will last — are a matter of intense debate.

In the two months between mid-March and mid-May, the **global case fatality ratio** based on reported cases and deaths was 7.1 per cent. In the following two months, the CFR dropped to 3 per cent. In the subsequent three months to mid-October it ticked up slightly to 3.5 per cent. However, in the week of 13-20 October as cases surged in Europe and North America the global CFR was just 1.5 per cent. In **European countries** the CFR is low compared with the first wave but the number of deaths has increased from around 2,000 per week in late August to 8,000 now.

Declining death rates have been reported from a wide range of locations in North America and Europe. A 13 August letter published in JAMA by doctors at **Houston Methodist**, which operates eight hospitals, reported huge differences between what they called surge 1 and surge 2 patients¹⁷. In surge 2, which took place from 16 May to 7 July, a smaller proportion of patients required intensive care (20%), as compared with those seen earlier, from 13 March to 15 May, during surge 1 (38%). They spent less time in the hospital (4.8 days versus 7.1 days). Most importantly, the latter patients were much less likely to die — 5.1 per cent versus 12.1 per cent.

Another study analysed biweekly mortality rates for admissions between 1 March and 20 June, 2020 in a single health system in New York City. Outcomes were obtained as of 14 July, 2020¹⁸. They included 4,689 hospitalisations, of which 4,661 (99.4%) had died or been discharged. The median age, and the proportion male or with any comorbidity decreased over time; median real-time PCR cycle threshold increased (indicating relatively less concentration of virus). Unadjusted mortality dropped each period, from 30.2 per cent in the first two weeks to 3 per cent in the last two weeks, with the last eight weeks being lower than the 95 per cent control limits.

The authors postulated that incremental improvements in outcomes are likely a combination of increasing clinical experience, decreasing hospital volume, growing use of new pharmacologic treatments (such as corticosteroids, remdesivir and anti-cytokine treatments), non-pharmacologic treatments (such as proning), earlier intervention, community awareness, and lower viral load exposure from increasing mask wearing and social distancing.

A **broad analysis of 53 countries and regions** with the highest coronavirus death rates identified similar trends¹⁹. Published in September in *Transboundary and Emerging Diseases* by a group of American and Chinese

¹⁷ <https://www.washingtonpost.com/health/2020/10/09/covid-mortality-rate-down/>

¹⁸ <https://www.medrxiv.org/content/10.1101/2020.08.11.20172775v1>

¹⁹ <https://onlinelibrary.wiley.com/doi/full/10.1111/tbed.13819>

researchers, the report found that 80 per cent of countries and regions estimated lower case fatality rates in the disease's second wave.

A number of reasons have been cited for the decline in death rates across the world. The most common are:

1. Most infections in the second wave are young people.
2. The clinical management of COVID-19 has greatly improved.
3. More widespread testing is capturing a more diverse range of people and illness.
4. The viral load in new patients has declined over time.

There is no debate about the first three causal factors. In the US, consistent with the New York study cited above, there has been a clear trend towards younger age groups being infected. The US CDC reported that during June–August 2020, COVID-19 incidence was highest in persons aged 20–29 years, who accounted for more than 20 per cent of all confirmed cases²⁰. Across the southern United States in June 2020, increases in percentage of positive SARS-CoV-2 test results among adults aged 20–39 years preceded increases among those aged ≥60 years by 4–15 days. The same trend has been observed in Australia.

Public Health France has reported that the virus has been circulating particularly among young adults between the ages of 20 and 39. Roughly 40 per cent of new cases were among the same age group in Spain in late August. The UK is also reporting that the majority of new cases are aged less than 40. Young people generally have a better prognosis than older age groups. Since the beginning of March, more than 1,000 young adults between the ages of 20 and 40 have been treated in ICU in France, just a little over 5 per cent of the total number of people who were in intensive care in the country.

As the COVID-19 pandemic moves into its 10th month, greater patient survival suggests that treatment of severe disease has improved. How much of this improvement is due to better supportive care and how much to pharmaceuticals is a matter of debate.

Since early in the year, a number of effective drugs have emerged. Early research showed that remdesivir (an experimental antiviral medication) and dexamethasone (a corticosteroid drug used for years to reduce inflammation) are most effective at improving recovery and survival rates in seriously ill COVID-19 patients. Remdesivir was shown to reduce the time to recovery. Meanwhile, dexamethasone has been shown to reduce mortality in patients who require ventilation or oxygen. However, a large WHO study has found that **remdesivir is not as effective as hoped**. The Solidarity trial suggests the drug does little in severe cases. Of 2,743 hospitalised patients who received the drug, 11 per cent died, versus 11.2 per cent in a control group of roughly the same size. The difference is so small it could have arisen by chance²¹.

With time, clinicians have also found ways to improve treatment of seriously ill patients beyond proven drug treatments. Doctors have found positioning patients in the prone position works better than if they are on their backs. They also now delay the use of ventilators where possible, as months of experience had shown that it was difficult to take people off the machines.

²⁰ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6939e1.htm>

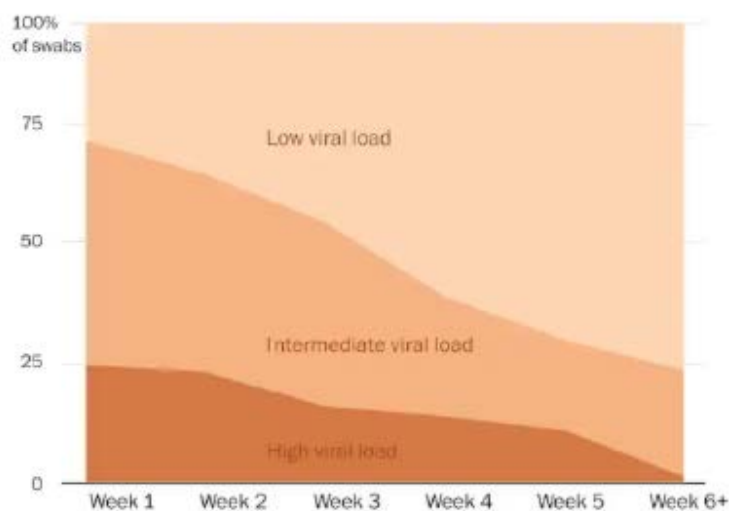
²¹ <https://www.sciencemag.org/news/2020/10/remdesivir-and-interferon-fall-flat-who-s-megastudy-covid-19-treatments>

Declining Viral Load | Declining Death Rates

One idea that has generated a lot of discussion recently, bolstered by several studies, is that distancing and masks are reducing the dose of virus people are receiving, resulting in less-severe illness. A US study from the city of **Detroit** shows that the initial SARS-CoV-2 viral load in nasopharyngeal samples has been decreasing as the pandemic progressed²². The authors also observed that the decline in viral load was associated with a decrease in the death rate. In the first week of the study, about 25 per cent of the viral loads were high, half were intermediate and 25 per cent were low. By the fifth week, about 12 per cent had high viral loads, and in the sixth week, no patients had high viral loads. The death rate of patients in the high viral load group was 45 per cent, compared with 32 per cent of those in the intermediate group and 14 per cent in the low group.

Falling viral load

In an analysis of 708 nasal swabs from hospitalized patients with covid-19, researchers found that there was a progressive decline from March to June in the percentage with a high viral load.



The main author, Dr El Zein adds: "Exact reasons for a decrease in initial viral load over time are unclear. A downward trend in the initial VL may reflect a reduction in the severity of the pandemic and trends in the viral load values over time may represent a marker to assess the progress of the pandemic. Rapid implementation of social distancing measures, lockdown and widespread use of facemasks may have contributed to a decrease in the exposure to the virus."

Summary

It is clear that global COVID-19 case fatality ratios (CFR) have been declining since the first few months of the pandemic. A report by American and Chinese researchers found that 80 per cent of 53 countries and regions estimated lower CFRs in the disease's second wave. In addition, local longitudinal studies in a number of countries have confirmed this trend. In Europe, there are signs that this trend is reversing with a fourfold increase in deaths since early September. Explanations for this trend include the younger demographic profile of cases in the second wave, improved clinical management practices, and broader testing. In addition, there is increasing evidence that over time the viral load of new identified cases has been decreasing. This may be due to wider adoption of mask wearing and physical distancing.

²² https://www.eurekalert.org/pub_releases/2020-09/esoc-uss092320.php



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