

## Authors

Dr Doug Quarry  
Professor Oxford is on vacation

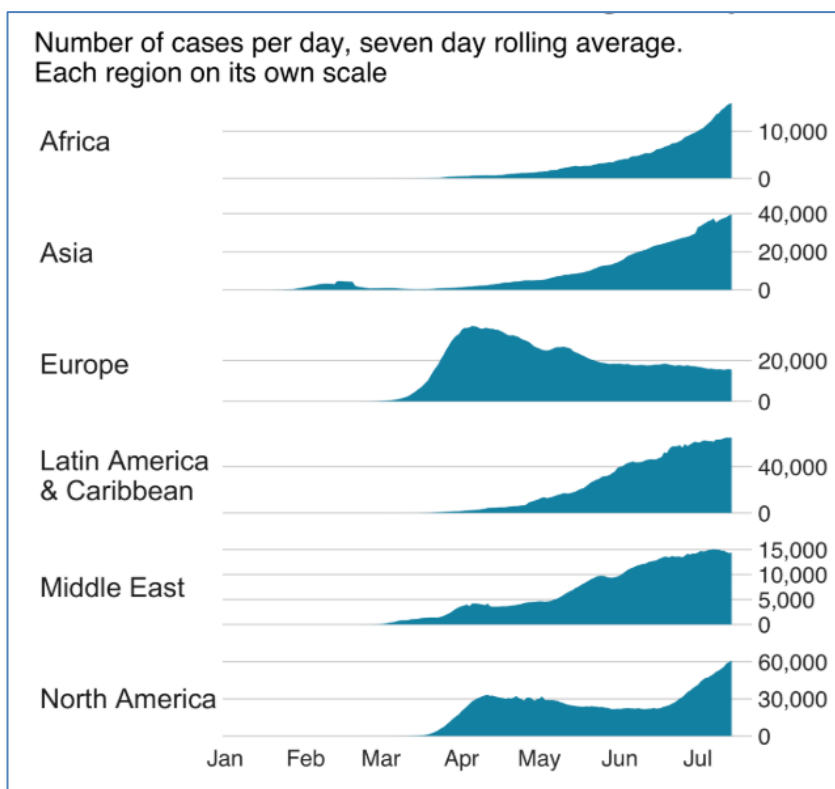
The Executive Summary is produced weekly and contains in-depth analysis.

## CONTENTS

Today's Executive Summary focuses on COVID-19 illness.

- Global snapshot
- Locations with lockdowns
  - Melbourne
  - Hong Kong (**new**)
  - Leicester
  - Israel
  - Beijing
- COVID-19 vaccine and treatment wars
- The effect on front-line staff
- The best summary of COVID-19 I have read
- Article / Journal roundup
- Update on Africa

## GLOBAL SNAPSHOT



See “Focus on Africa”, later in this Executive Summary, where daily case count continues to grow.

Source: [BBC](#)  
Oceania cases excluded as too low to register on scale

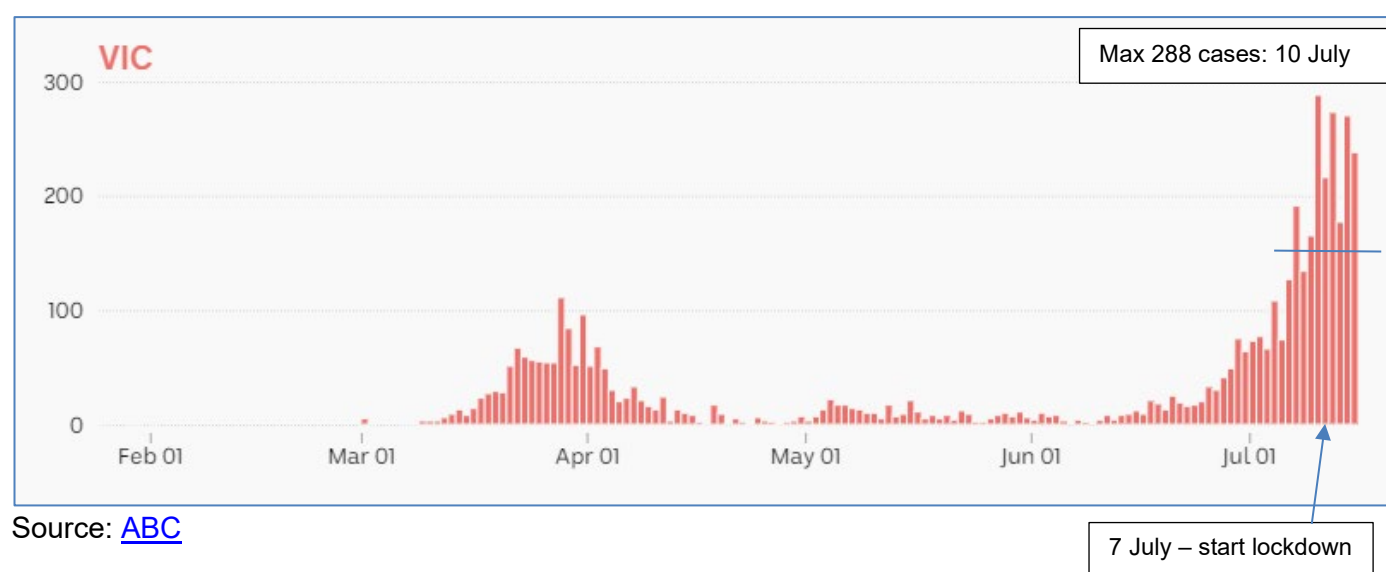
## RE-INTRODUCED LOCKDOWNS: FOLLOW-UP

Note: the term “Lockdown” is not specific. Restrictions can vary from “Stay at home” orders to reducing the number of people who can sit on a table at restaurant.

### MELBOURNE’S LOCKDOWN NOT WORKING YET

- Greater metropolitan Melbourne has been under a Stage 3 “Stay at home” order since 7 July
- The expected drop in the daily case count has not occurred yet
- Today’s case count is 238
- Stage 4 restrictions are being contemplated. These may include:
  - Closure of schools and other educational facilities, and
  - Closure of businesses except essential services such as supermarkets, pharmacies and medical clinics.

### Daily confirmed cases in Victoria, Australia



Source: [ABC](#)

### SYDNEY HOTSPOT DECLARED

Sydney has declared two south-western local government areas (Liverpool and Campbelltown) as “hotspots” following a cluster of cases at the Crossroads Hotel. The cluster size is now 30. This has increased from only two cases five days ago. Genomic testing has shown that the virus was imported from Melbourne.

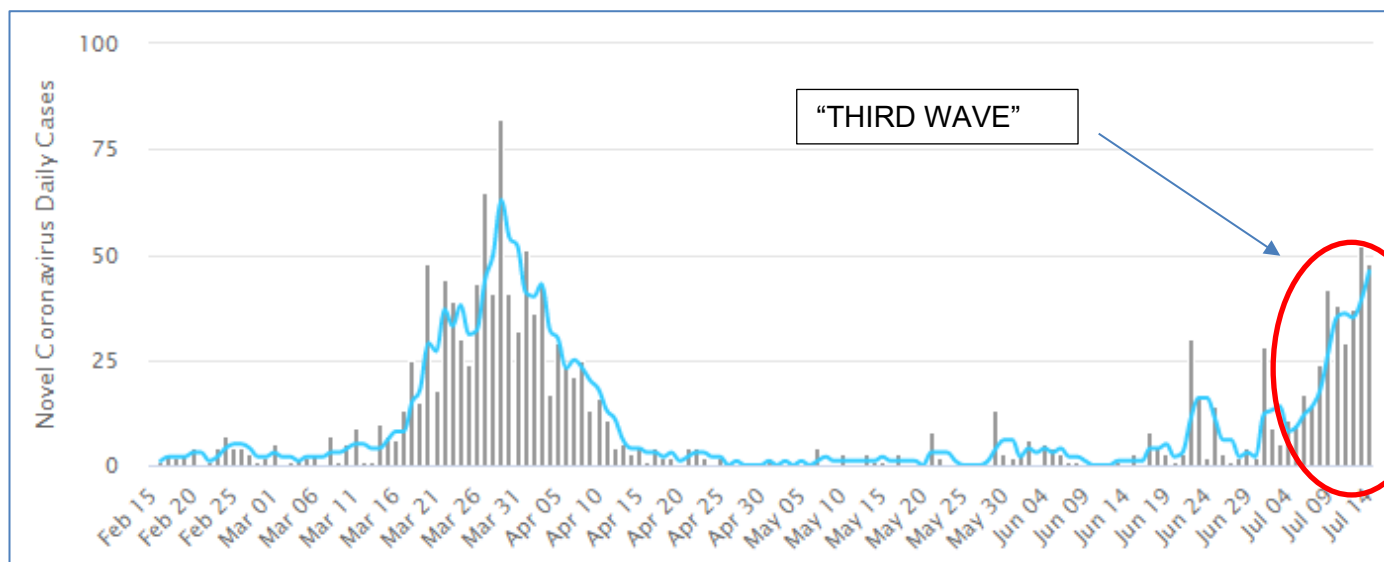
Prior to this cluster, five Australian states / territories [Queensland (QLD), South Australia (SA), Tasmania (TAS), Northern Territory (NT), Australian Capital Territory (ACT)] had eliminated coronavirus and New South Wales was close to elimination.

**The Premier of NSW has stated that there will be no further lockdowns in Sydney**, however stricter requirements for hotels were announced yesterday.

## HONG KONG: THIRD WAVE

There has been a significant increase in daily new cases in Hong Kong since early July. Last week there were 253 cases with 30% unable to be traced (= community transmission).

**DAILY NEW CASES IN HONG KONG, SAR.** Source: [WorldoMeters](https://www.worldometers.info/coronavirus/country/hong-kong/)



### Restrictions are being reintroduced:

- Restaurants
  - No dine-in services between 6pm and 5am
  - No more than four on a table
- Number of people who can gather in public reduced from 50 to four
- Passengers on public transport must wear masks
- Foreign domestic workers must be quarantined in a hotel at their employer's expense

### Several causes are mooted:

- Exemption from tests and quarantine for airline and cruise crews
- Eight people to a table in restaurants

### Suggestions:

- Returnees from high-risk areas such as India, the Philippines and Pakistan should be put in "quarantine centres"
- Returnees from lower-risk areas can use hotel quarantine

## LEICESTER, UK – REMAINS IN LOCKDOWN

“Soft lockdown” enforced 29 June following a spike in cases. To be reviewed on 18 July

- Residents asked to stay at home as much as possible
- Limits on social gatherings
- Non-essential shops shut
- Hotels and places of worship closed
- Increased COVID-19 testing
- No “stay at home” order

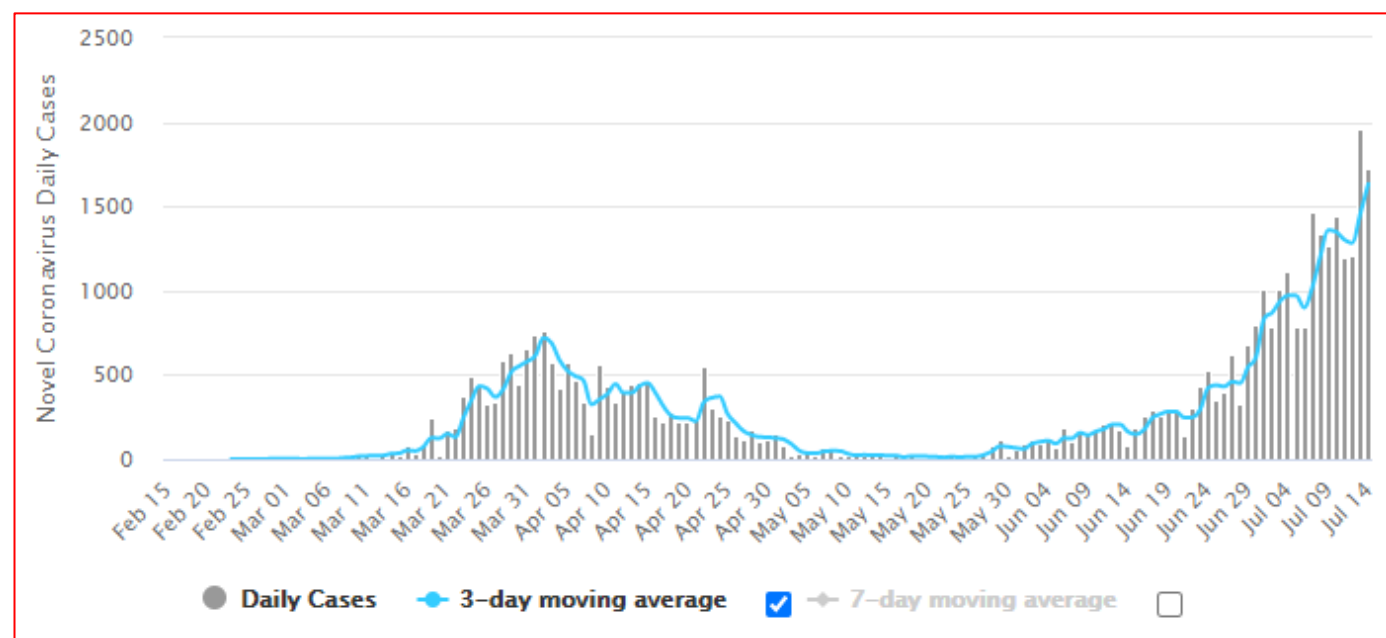
[Information from Public Health England](#) shows infections on the rise in **Blackburn, Bedford** and **Peterborough**. [BBC reports](#) that since lockdown eased more than **100 outbreaks have been tackled a week**, according to Health Secretary, Matt Hancock.

## ISRAEL

Cases continue to rise: soft lockdown not working yet.

- Current restrictions:
  - Bars, clubs and gyms: closed
  - Reduced numbers at restaurants, in places of worship and on public buses
  - Over 30,000 contacts quarantined
  - Resumption of phone surveillance program
- Health Ministry considering:
  - A total (stay at home) lockdown
  - Closing restaurants, synagogues and yeshivas

### Israel: Daily confirmed COVID-19 cases



Source: [WorldoMeters](#)

## BEIJING

Restrictions are starting to be eased in Beijing after five days of no new cases. There are now no “high risk” areas in Beijing.

## COVID-19 VACCINE AND TREATMENT WARS

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### CORONAVIRUS: WHO CALLS FOR VACCINE TO BE SHARED “FOR PUBLIC GOOD”

The [WHO has said](#) any coronavirus vaccine should be shared between countries as a public good, and that new mothers with COVID-19 can still breast-feed their babies.

### BILL GATES WARNING

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“If we just let drugs and vaccines go to the [highest bidder](#), instead of to the people and places where they are most needed, we’ll have a longer, more unjust, deadlier pandemic.

### LACK OF MULTILATERALISM

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[Bloomberg commentary](#) “Once COVID-19 shots become available, there will be arguments about who gets them, and an even bigger battle with anti-vaxxers who refuse them.

“For most people, a vaccine against the coronavirus can’t come soon enough, as it will be the only tolerable way to achieve herd immunity. So, it’s encouraging that more than 100 drug candidates in 12 countries are in development, and eight are already entering clinical trials. To accelerate the process, some people are heroically volunteering to expose themselves to infection. With luck, some of us can get our shots next year.

“And yet, there’s still a danger that humanity will fail in its quest to control COVID-19. The culprit wouldn’t necessarily be the medical complexity, fiendish as it is, of engineering a vaccine. It could also be the ensuing politics surrounding inoculation. The fights will be intense, irrational, and sometimes nasty.



“The first problem is that even after we become confident that a particular vaccine is effective and safe, there won’t be enough for everyone. So, we’ll have to decide: Who should get the shots first? Who won’t get any? These questions will come up between countries, and within them.

“Given the right leadership, the world would overcome these difficulties with dignity and wisdom. Forty years ago, for example, as the world shivered in a Cold War between the U.S. and the Soviet Union, humanity nonetheless managed to unite and eradicate smallpox.

“Today, however, the odds for health-care multilateralism are bad. A new Cold War is underway between the U.S. and China, and a “My Country First” nationalism is infecting ever more countries, including several of those working on vaccines.

“Rich nations will try to outbid poor ones in securing supplies of the vaccine. And someone like U.S. President Donald Trump may not necessarily “share” a scarce vaccine invented and made in America with other countries. German officials were outraged earlier this year after reports - never confirmed - that Trump tried to buy CureVac, a German company working on a vaccine, in order to get exclusive access”

### EUROPEAN UNION

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[Germany, France, Italy and the Netherlands](#) signed an initial deal with pharmaceutical company AstraZeneca for over 300 million doses of a promising coronavirus vaccine currently still in the experimental phase, Germany’s health ministry confirmed Saturday.

## **UNITED KINGDOM**

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[The U.K.](#) could roll out 30 million doses of a COVID-19 vaccine as early as September, according to the British Government. The Government said the U.K. would be the first country to be given access to a vaccine being developed at Oxford University, should it prove successful in clinical trials.

## **UNITED STATES**

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The [United States](#) has secured almost a third of the first 1 billion doses planned for AstraZeneca's experimental COVID-19 vaccine by pledging up to \$US1.2 billion (\$1.84 billion).

After US President Donald Trump demanded a vaccine, the US Department of Health and Human Services (HHS) agreed to provide up to \$US1.2 billion to accelerate British drug maker AstraZeneca's vaccine development and secure 300 million doses for the United States (population almost 330 million).

"This contract with AstraZeneca is a major milestone in Operation Warp Speed's work towards a safe, effective, widely available vaccine by 2021," US Health Secretary Alex Azar said.

## **US BUYS FIRST THREE MONTHS PRODUCTION OF REMDESIVIR**

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The [United States](#) is buying nearly all of the next three months' projected production of COVID-19 treatment remdesivir from US manufacturer Gilead.

"President Trump has struck an amazing deal to ensure Americans have access to the first authorised therapeutic for COVID-19," Department of Health and Human Services Secretary Alex Azar said in a statement. A course of treatment in the US will cost \$2,340 (£1,900).

Nine companies can make the drug under license outside the US for distribution in 127 mostly poorer countries, and the cost is lower. But the project is still in its early stages.

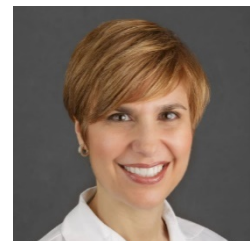
## THE EFFECT ON FRONT-LINE STAFF

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### ACCOUNT OF NYC ER DOCTOR'S SUICIDE

Dr. Lorna Breen was unflappable - until she faced a new enemy. It is worth reading this account from the New York Times of the stress treating COVID patients in New York that led to this [renowned ER doctor's suicide](#).

A friend commented on Twitter: "Thank you nytimes for this careful and clear-eyed piece on my friend's death by suicide. COVID hit us like a tsunami."



### SILENCE IS THE ENEMY FOR DOCTORS WHO HAVE DEPRESSION

Last month, a [study in the Journal of the American Medical Association](#) reviewed the literature on depression and depressive symptoms in resident physicians - those are doctors still being trained. They found more than 50 studies on the subject. Research shows that almost 30% of resident physicians have either symptoms or a diagnosis of depression.

The numbers, and how they compare with other professions, are almost beside the point. Physicians are in a position of needing to care for others continuously. That strain, coupled with difficulties in helping themselves, leaves both patients and physicians at risk. The studies that followed doctors over the course of their residencies found that the rate of depression symptoms increased more than 15% within a year of the beginning of training.

Several doctors commented on Twitter:

- I'm an ER doctor. I've seen a therapist and have been on antidepressants. Our system considers this a red flag, instead of a positive signal that I'm taking the best care of myself possible. This needs to change.
- I'm a pediatrician. I have a therapist and have been on antidepressants for decades. It allows me to function in a healthy manner and have empathy for the mental health issues of my patients. Thank you
- I'm a Child and Adult Psychiatrist. I suffered from Post-Partum Depression for months and was too afraid to tell anyone!! I finally asked for help when the pain became overwhelming. I do this for a living and was afraid of being transparent. We must end the stigma

### PSYCHOLOGICAL TRAUMA IS THE NEXT CRISIS FOR CORONAVIRUS HEALTH WORKERS

Excellent article in Scientific American: [Psychological Trauma Is the Next Crisis for Coronavirus Health Workers](#)

- **Health care workers are not just treating** a flood of critically ill patients during the pandemic.
- **They are risking their own health**, witnessing higher rates of death and experiencing breakdowns of protocol and support
- **These acute stresses could lead to** mental health issues, yet therapeutic support is lacking.

## THE BEST SUMMARY OF COVID-19 I'VE READ SO FAR

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### PATHOPHYSIOLOGY, TRANSMISSION, DIAGNOSIS, AND TREATMENT OF CORONAVIRUS DISEASE 2019 (COVID-19): A REVIEW: [JAMA NETWORK](#)

**Importance:** The coronavirus disease 2019 (COVID-19) pandemic, due to the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has caused a worldwide sudden and substantial increase in hospitalizations for pneumonia with multiorgan disease. This review discusses current evidence regarding the pathophysiology, transmission, diagnosis, and management of COVID-19.

**Observations:** SARS-CoV-2 is spread primarily via respiratory droplets during close face-to-face contact. Infection can be spread by asymptomatic, pre-symptomatic, and symptomatic carriers. The average time from exposure to symptom onset is 5 days, and 97.5% of people who develop symptoms do so within 11.5 days.

The most common symptoms are fever, dry cough, and shortness of breath. Radiographic and laboratory abnormalities, such as lymphopenia and elevated lactate dehydrogenase, are common, but nonspecific.

Diagnosis is made by detection of SARS-CoV-2 via reverse transcription polymerase chain reaction testing, although false-negative test results may occur in up to 20% to 67% of patients; however, this is dependent on the quality and timing of testing.

Manifestations of COVID-19 include asymptomatic carriers and fulminant disease characterized by sepsis and acute respiratory failure. Approximately 5% of patients with COVID-19, and 20% of those hospitalized, experience severe symptoms necessitating intensive care. More than 75% of patients hospitalized with COVID-19 require supplemental oxygen.

Treatment for individuals with COVID-19 includes best practices for supportive management of acute hypoxic respiratory failure. Emerging data indicate that dexamethasone therapy reduces 28-day mortality in patients requiring supplemental oxygen compared with usual care (21.6% vs 24.6%; age-adjusted rate ratio, 0.83 [95% CI, 0.74-0.92]) and that remdesivir improves time to recovery (hospital discharge or no supplemental oxygen requirement) from 15 to 11 days.

In a randomized trial of 103 patients with COVID-19, convalescent plasma did not shorten time to recovery. Ongoing trials are testing antiviral therapies, immune modulators, and anticoagulants. The case-fatality rate for COVID-19 varies markedly by age, ranging from 0.3 deaths per 1000 cases among patients aged 5 to 17 years to 304.9 deaths per 1000 cases among patients aged 85 years or older in the US. Among patients hospitalized in the intensive care unit, the case fatality is up to 40%.

At least 120 SARS-CoV-2 vaccines are under development. Until an effective vaccine is available, the primary methods to reduce spread are face masks, social distancing, and contact tracing. Monoclonal antibodies and hyperimmune globulin may provide additional preventive strategies.

**Conclusions and Relevance:** As of July 1, 2020, more than 10 million people worldwide had been infected with SARS-CoV-2. Many aspects of transmission, infection, and treatment remain unclear. Advances in prevention and effective management of COVID-19 will require basic and clinical investigation and public health and clinical interventions.

## ARTICLE / JOURNAL ROUNDUP

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### VIGILANCE IN CALIFORNIA HAD A THREE-MONTH SHELF LIFE

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[The Atlantic](#) describes how the end of California's coronavirus miracle holds sobering lessons.

"On March 1, California seemed destined to be pummeled by the coronavirus. America's most populous state has large, crowded cities and a diverse population, and travel between it and Asia and Europe is prodigious. Seattle, another West Coast hub, had just become the first U.S. city to be hit by the virus, and a cruise ship crawling with COVID-19 was about to enter San Francisco Bay.

"Three months later, California had weathered the virus's first storm. By June 1, the state had experienced a total of 115,000 cases and 4,200 deaths. In contrast, New York State, its population half that of California, had seen 372,000 cases and 29,900 deaths, not counting thousands more who died at home. Had California's per capita mortality rate equaled New York's, 55,000 more people would have died. It was dubbed it the 'California miracle'.



“A month later, the miracle has evaporated. Case and hospitalization rates in California have doubled since early June. Although mortality rates have lagged, deaths will invariably follow. So will finger-pointing. How did the Golden State manage to screw things up after such a promising start? **California’s experience shows that doing the right thing matters—but gives you no special privilege when you stop doing it.**

“The broader problem, however, was that too many people heard “We’re starting to open” **but missed the next part: “... and we have to do it safely.**

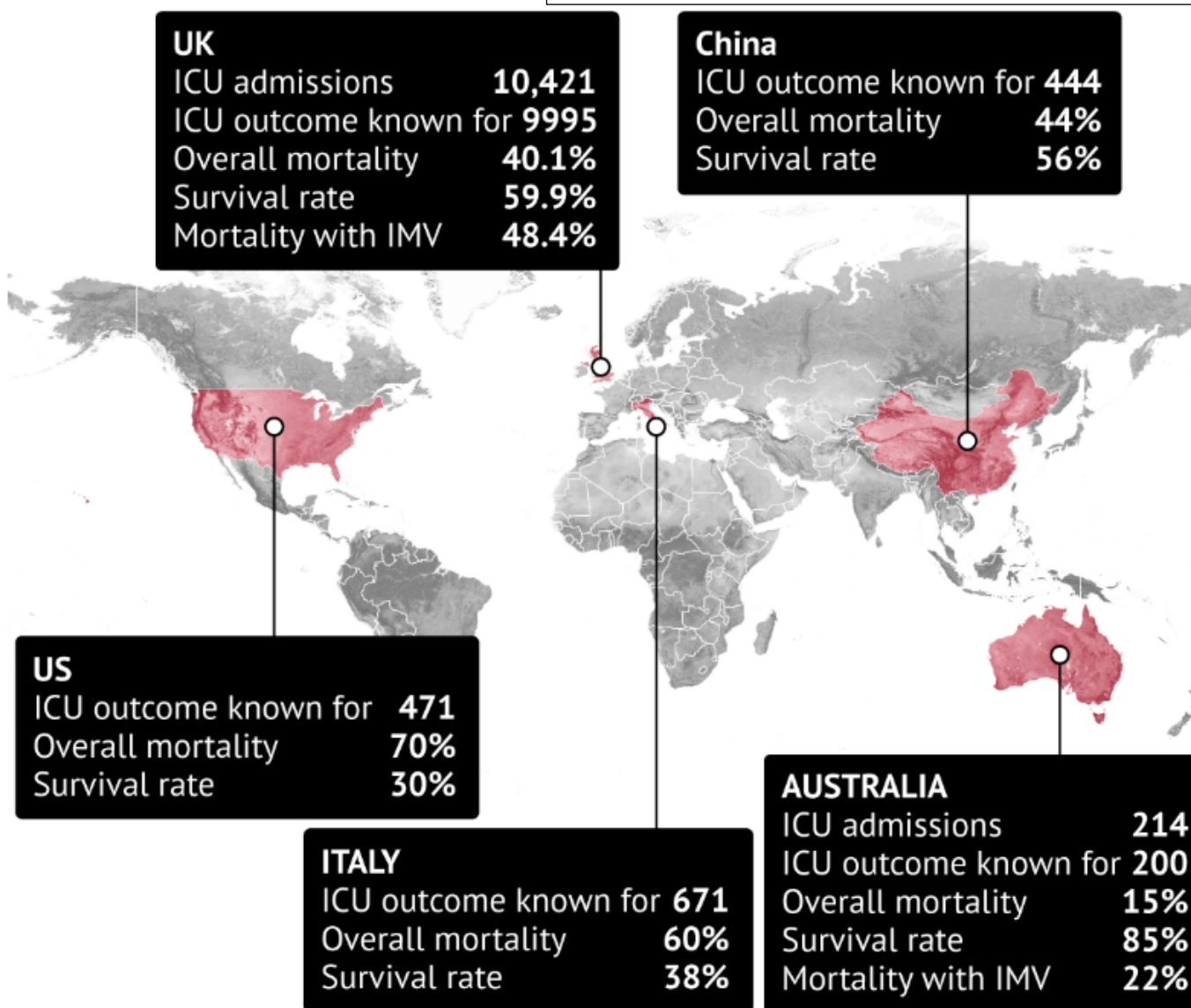
“Safety meant that people needed to continue to maintain their distance from one another, reliably wear masks, and avoid large crowds. As shelter-in-place rules were relaxed, too many people—particularly, but not exclusively, young ones—interpreted opening up as permission to return to their pre-coronavirus life. **They grew complacent. And with complacency came sloppiness....”**

## ICU SURVIVAL RATES VARY AROUND THE WORLD

### ICU outcomes for COVID-19 patients

IMV = Invasive Mechanical Ventilation

**Data:** Australia - Monash University SPRINT-SARI Australia Study. UK - Intensive Care National Audit & Research Centre report on COVID-19 in critical care. China, US, Italy - National University of Singapore (figures for China, the US and Italy are not national figures but the best available from published local studies.)



Source: [Sydney Morning Herald](#):

## POTENTIAL IMPACT OF THE COVID-19 PANDEMIC ON HIV, TUBERCULOSIS, AND MALARIA IN LOW-INCOME AND MIDDLE-INCOME COUNTRIES

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[Lancet](#): In high-burden settings, deaths due to HIV, tuberculosis, and malaria over five years could increase by up to 10%, 20%, and 36%, respectively, compared with if there was no COVID-19 pandemic.

**HIV**: The greatest impact on HIV was estimated to be from interruption to anti-retroviral therapy, which could occur during a period of high health system demand.

**Tuberculosis**: the greatest impact would be from reductions in timely diagnosis and treatment of new cases,

**Malaria**: The greatest impact could be because of interruption of planned net campaigns. These could lead to a loss of life-years over 5 years that is of the same order of magnitude as the direct impact from COVID-19 in places with a high burden of malaria and large HIV and tuberculosis epidemics.

## PRELIMINARY DATA SUGGEST THAT SARS-CoV-2 IS RESILIENT IN AEROSOL FORM

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[CDC EID September 2020](#): We aerosolized severe acute respiratory syndrome coronavirus 2 and determined that its dynamic aerosol efficiency surpassed those of severe acute respiratory syndrome coronavirus and Middle East respiratory syndrome coronavirus. Although we performed experiment only once across several laboratories, **our findings suggest retained infectivity and virion integrity for up to 16 hours in respirable-sized aerosols.**

## AIRBORNE CORONAVIRUS: WHAT YOU SHOULD DO NOW?

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The [coronavirus can stay aloft for hours in tiny droplets in stagnant air](#), infecting people as they inhale, mounting scientific evidence suggests. This risk is highest in crowded indoor spaces with poor ventilation and may help explain super-spreading events reported in meatpacking plants, churches and restaurants.

It is unclear how often the virus is spread via these tiny droplets, or aerosols, compared with larger droplets that are expelled when a sick person coughs or sneezes, or transmitted through contact with contaminated surfaces, said Linsey Marr, an aerosol expert at Virginia Tech.

Aerosols are released even when a person without symptoms exhales, talks or sings, according to Dr. Marr and more than 200 other experts, who have outlined the evidence in an open letter to the World Health Organization.

What is clear, the experts said, is that:

- People should consider **minimizing time indoors** with people other than their family
- **Schools, nursing homes and businesses should consider adding new air filters** and ultraviolet lights that can kill airborne viruses.

## COVID-19 CAUSE OF DEATH

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A [non-peer reviewed paper](#) on the medRxiv preprint server concludes that **"death in COVID-19 is primarily a consequence of immune-mediated, rather than pathogen-mediated, organ inflammation and injury."**

Another [new autopsy series](#) of 82 people who died from COVID-19 again demonstrates the prominence of cytokine storm and the hyperimmune response.

## THE THREE MOST AFFECTED COUNTRIES ARE ALSO THOSE THAT RESIST MASKS

The [three countries at the top of the pandemic chart](#) as far as cases and deaths (US, Brazil and the UK), are those in which people resist wearing masks.

Now, in the same week the World Health Organization confirms there is "emerging evidence" of airborne transmission of the coronavirus, [senior scientists are urging Britons to take up mask wearing](#), as two new reports highlight the potential effectiveness of facial coverings.

## NEUTRALISING ANTIBODY LEVELS CAN DECLINE QUICKLY

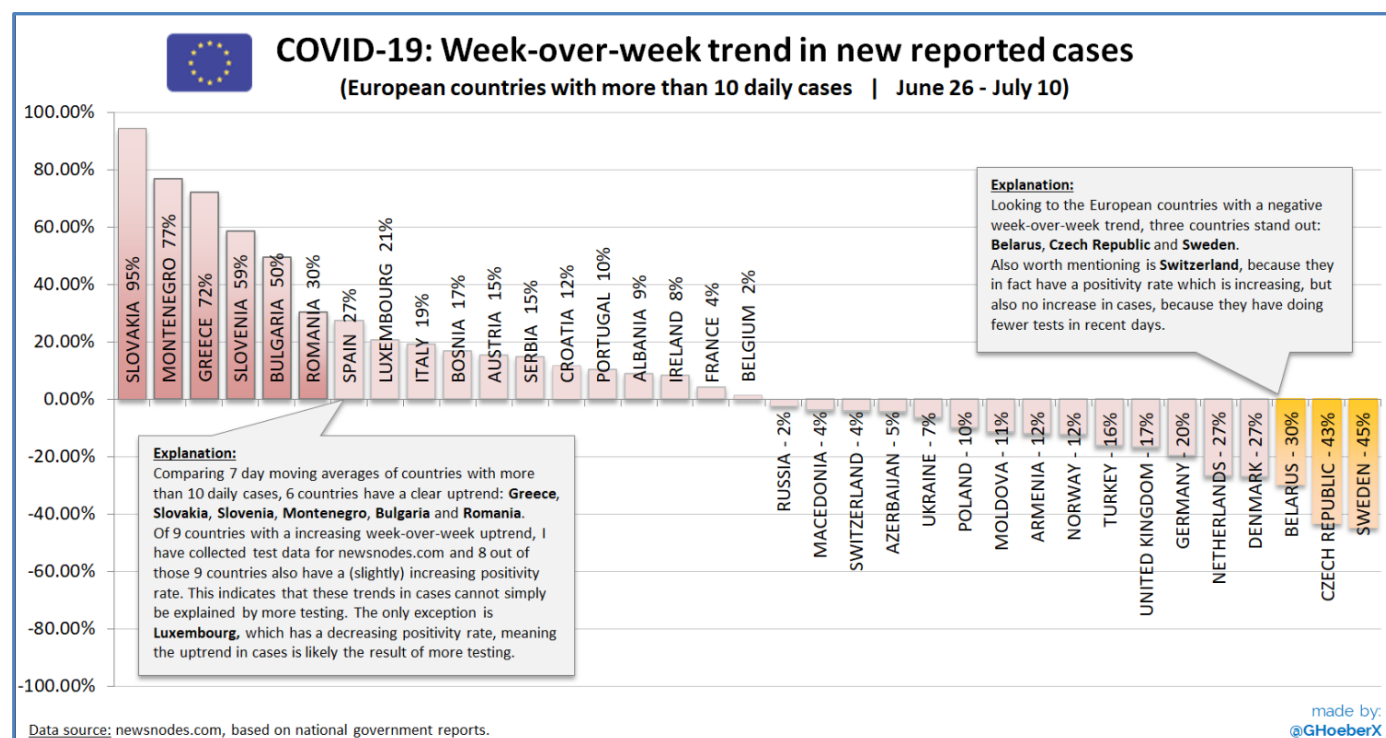
A [new non-peer reviewed](#) study (11 July 2020) demonstrates declining neutralizing antibodies (nAb) titres in the majority of individuals infected with COVID-19, and with those with a low neutralising antibody nAb response, titres can return to base line over a relatively short period.

Transient nAb response is a feature shared by both a SARS-CoV-2 coronavirus infection that causes low disease severity and the circulating seasonal coronaviruses that are associated with common colds. This study has important implications when considering widespread serological testing, Ab protection against re-infection with SARS-CoV-2 and the durability of vaccine protection.

**International SOS comment:** Reducing antibody titres are common following an immune challenge. They have little predictive value regarding the cellular immune response expected from re-challenge.

## RELATIVE CHANGE IN NEW REPORTED CASES FOR EUROPEAN COUNTRIES.

Six countries have a clear uptrend in COVID-19 cases (mainly in Southeast Europe), while three (including Sweden) are reporting a downtrend



Source: [Newsnodes.com](https://www.newsnodes.com)

## IT'S TIME TO BEGIN A NATIONAL WASTEWATER TESTING PROGRAM FOR COVID-19

As the [COVID-19 pandemic marches across America](#), causing record-breaking numbers of cases, almost every solution for controlling the disease includes more testing, especially as cities and states try to reopen. But with states hitting their limits on testing, we need new tools for understanding COVID-19 transmission. A national wastewater surveillance program offers a cost-effective approach to track COVID-19 across the majority of the U.S. population and provide early warnings of resurgence.

## PRE-EXISTING IMMUNITY TO SARS-CoV-2: THE KNOWN AND UNKNOWN

[It is now established](#) that SARS-CoV-2 pre-existing immune reactivity exists to some degree in the general population. It is hypothesized, but not yet proven, that this might be due to immunity to common cold coronaviruses. This might have implications for COVID-19 disease severity, herd immunity and vaccine development, which still await to be addressed with actual data.

## CAN A PATIENT CATCH COVID-19 TWICE?

**Physician report from New Jersey:** It was the beginning of July, and he had just tested positive for SARS-CoV-2, the virus that causes COVID-19, for a second time - three months after a previous infection.

COVID-19 may also be much worse the second time around. During his first infection, my patient experienced a mild cough and sore throat. His second infection, in contrast, was marked by a high fever, shortness of breath, and hypoxia, resulting in multiple trips to the hospital.

**Comment: Eric Feigl-Ding:** "These re-infection reports are worrisome. Re-infection should be unlikely. Yet lots of reports mounting. I'm holding out judgement, but this article is worth sharing. One thing I will say – 'herd immunity' without vaccine was never any option."

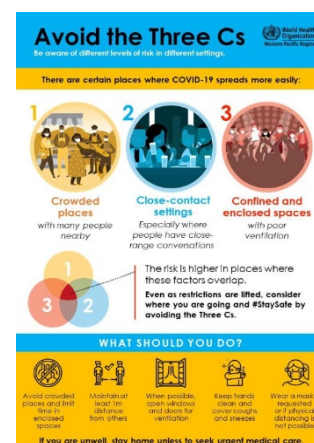
([Eric Feigl-Ding](#) is an Epidemiologist and Health Economist and Senior Fellow at @FAScientists. He has been at Harvard Public Health Department for over 16 years)

## THE MAJORITY OF NEW CASE ARE TIED TO SILENT TRANSMISSION

This [new study is troubling](#). It indicates that the majority of new cases are tied to SILENT transmission from a combination of the pre-symptomatic stage and asymptomatic infections.

## WERE THE "THREE C's" JAPAN'S SECRET SAUCE?

Japan this week declared its state of emergency over, and many have linked its success to the Japanese government's messaging. Instead of encouraging social-distancing practices like staying six feet away from other people at all times, the government told people to avoid [the three C's](#): closed spaces, crowded places, and close-contact settings.



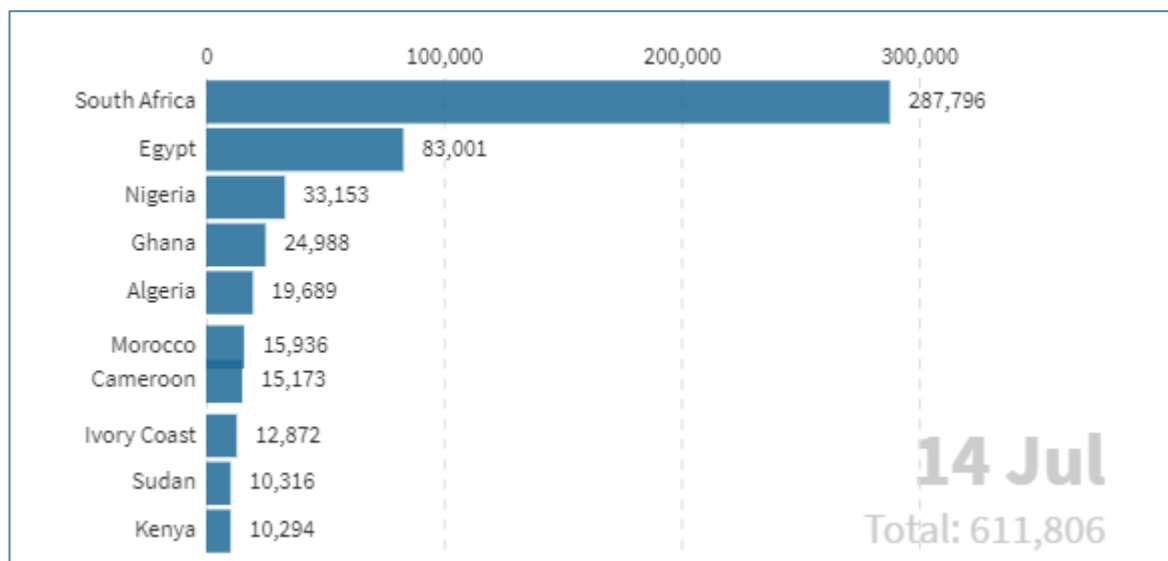
## FOCUS ON AFRICA

### RAPID CASE GROWTH

"With more than a [third of countries in Africa doubling their cases over the past month](#), the threat of COVID-19 overwhelming fragile health systems is escalating," says Dr Matshidiso Moeti, World Health Organization (WHO) Director for Africa.

"While it took nearly 100 days for Africa to reach an initial 100,000 cases, it took only 18 days for that to double to 200,000. It doubled again to 400,000 cases over the next 20 days. And on 8 July, total cases passed 500,000.

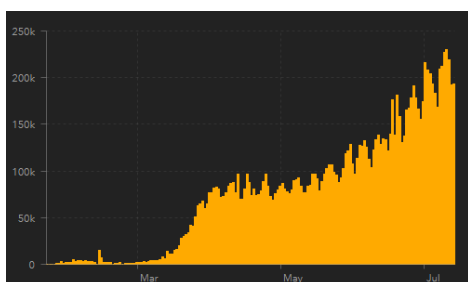
### CONFIRMED CASES IN AFRICA: CHART: [BBC](#)



### SOUTH AFRICA

**Cases: 298,000**

**Deaths: 4,500**



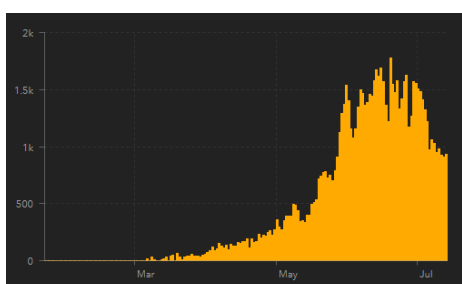
**Outbreak: has not reached peak**

South Africa imposed one of the world's strictest lockdowns in late March but cases have risen steadily since this was relaxed. Gauteng province, which includes Johannesburg, accounts for more than one third of the cases.

### EGYPT

**Cases: 84,000**

**Deaths: 4,000**



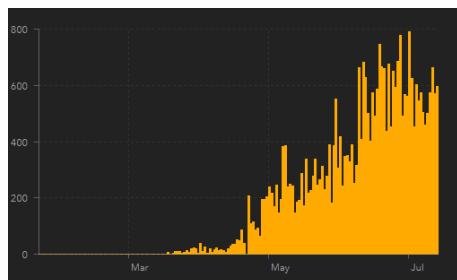
**Decreasing cases**

Egypt has seen case numbers rising rapidly since mid-May, but may now have peaked with new infections levelling off slightly in early July.

## NIGERIA

**Cases: 34,000**

**Deaths: 750**



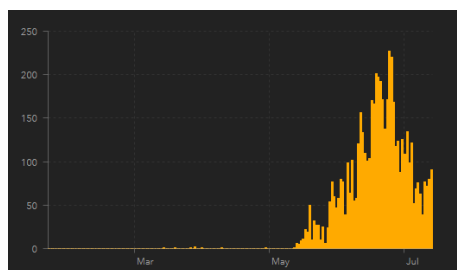
Outbreak: possibly near peak

Recorded the second-highest increase in deaths from COVID-19 after South Africa in the WHO report for 1 July.

## MAURITANIA

**Cases: 5,500**

**Deaths: 150**



Decreasing cases

Steep increase until recently.

## LOW DEATH RATE IN AFRICA?

The apparent death rate per capita in Africa has been low compared to other parts of the world, despite the poor health infrastructure in many African countries.

As we have previously said, this could be partly because of:

- The relatively young population in Africa - more than 60% under the age of 25
- Public Health Services that are practiced in coping with epidemics
- Higher levels of immunity due to more frequent infections
- Vaccinations such as BCG.

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