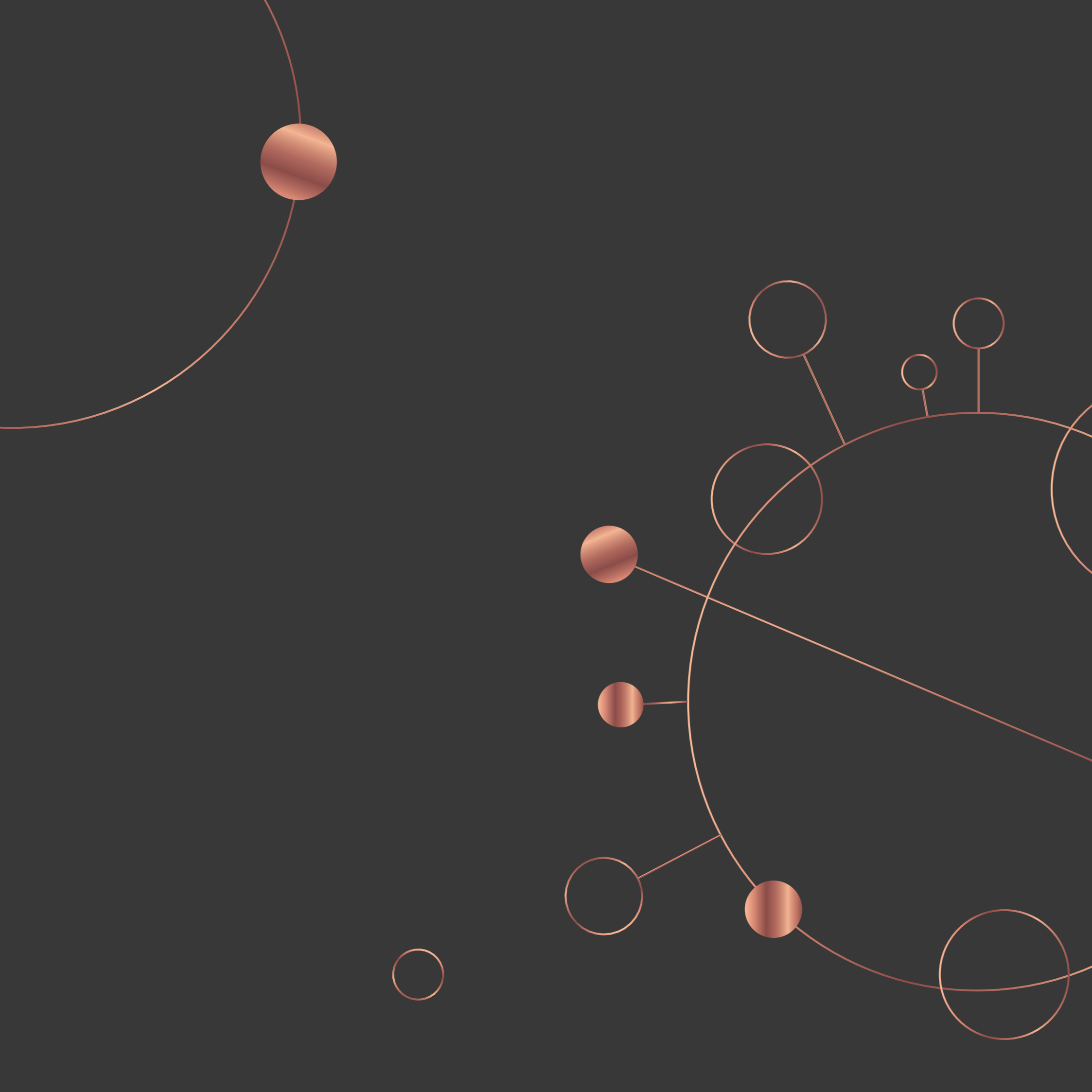


PEOPLE.
MIND.

**THE PANDEMIC
NO ONE EXPECTED**



THIS BOOK

was developed by Discovery to reflect on the impact that COVID-19 has had on the world. At Discovery, it was also a time of unequalled innovation, pace of delivery and a collective will to stand up to the challenges of the pandemic. This book represents the determined dedication of every Discovery employee in harnessing our core purpose as we worked to provide certainty, knowledge and valuable solutions during this extraordinary time.

The pandemic no one expected | The moment of every response

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Creative Agency: RCK | Roering Creative Kin

Editorial: John Brown Media

LEVELS

DISRUPTION

DISTANCE

INNOVATION

PARTICIPATION

HUMAN FIRST

FUTURE

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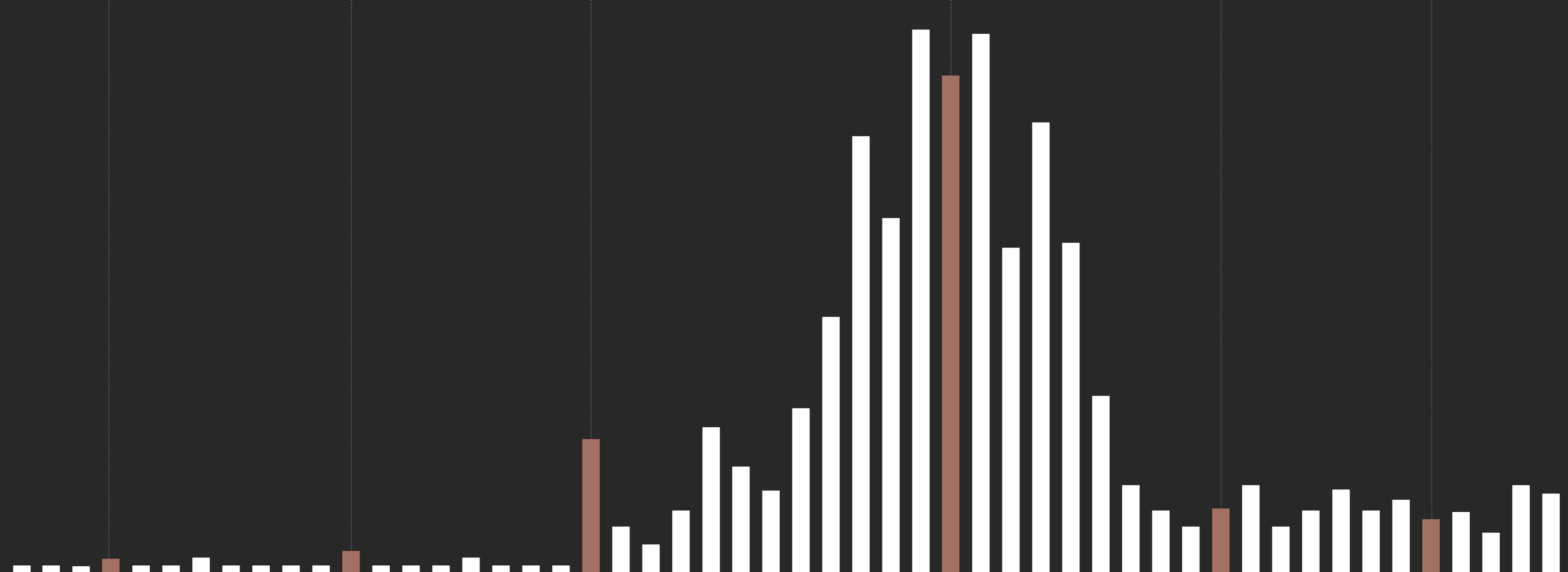
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EXPERIENCE
HOW THE
WORLD'S
POPULATION
CHANGED
COMPLETELY

**PE
O**

P

LE

I heard it's called corona virus - anonymous
The deaths are rising and it's moved to Italy, did you see the post? - anonymous
I have family overseas and it's real! Read the WhatsApp broadcast I sent you - anonymous
It's here! It's here! The first case of corona virus, buy everything, buy it all. Protect yourself and stock up - anonymous
The world will never be the same again - anonymous



It'll never get here, it's only a china thing - anonymous
Oh but isn't it basically like the flu, they don't even have a name for it - anonymous
It all started in a lab or from a bat, that's what I heard - anonymous
There's viruses everywhere, it only makes you stronger - anonymous
Apparently, it's a real thing and it's spreading like wild fire - anonymous

31 December 2019

The Municipal Health Commission releases a statement describing cases of “viral pneumonia” in Wuhan, China.

04 January 2020

The World Health Organization (WHO) tweeted confirmation of a cluster of pneumonia cases – with no deaths – in Wuhan.

09 January

Chinese authorities determine that the outbreak is caused by a novel coronavirus.

11 January

Chinese media report the first death from the still-unnamed novel coronavirus.

13 January

Thailand’s Ministry of Public Health reports an imported case of lab-confirmed novel coronavirus, marking the first recorded case outside of China.

14 January

The WHO states that, based on its experience with respiratory pathogens, the potential exists for human-to-human transmission in the 41 confirmed cases in China.

21 January

The WHO concludes a two-day mission to Wuhan, tweeting that there is “at least some human-to-human transmission” of the virus.

The United States reports its first confirmed case.

23 January

With 18 people dead and more than 630 infected, 18 million people are placed under lockdown in the cities of Wuhan and Huanggang ahead of the Lunar New Year celebrations.

Reuters reports that the virus “may not be as deadly as other coronaviruses such as Severe Acute Respiratory Syndrome (SARS), which killed nearly 800 people during a 2002-2003 outbreak also originating from China”.

24 January

The first European cases of the novel coronavirus are recorded in France.

25 January

The National Health Department says it has systems in place to deal with the novel coronavirus, should it spread to South Africa.

10.02.2020

The British government describes the outbreak as a ‘serious and imminent threat’.

11.02

The WHO announces that the disease caused by the novel coronavirus will be named COVID-19 – ‘CO’ stands for corona, ‘VI’ for virus and ‘D’ for disease (of 2019). The name is chosen to avoid inaccuracy and stigma, and does not refer to a geographical location, animal, individual or group of people.

14.02

Africa’s first case of COVID-19 is confirmed, involving a Chinese national who arrived in Egypt.

February 2020

From the first rumours coming out of Wuhan to the declaration of South Africa’s national lockdown, the novel coronavirus spread rapidly, bringing with it fear and confusion. As scientists grappled with this entirely new disease, world leaders and public health officials tried desperately to contain its spread.

27 January

Global stock markets and oil prices plunge as panicking investors bolt for safer assets amid reports that the spread of the novel coronavirus is accelerating.

30 January

The WHO declares the novel coronavirus outbreak to be a public health emergency of international concern, the organisation’s highest level of alarm. There are now 98 cases and no deaths in 18 countries outside China.

31 January

Retailer Dis-Chem reports unusually high demand for surgical face masks at its South African stores.

03 February

China says it ‘urgently needs’ protective medical equipment as the novel coronavirus death toll passes that of the 2002 SARS crisis. More than 17 000 people are now infected in the country.

06 February

Panic buyers storm supermarkets in Hong Kong to buy toilet paper amid false online claims of shortages.

07 February

Researchers at the South China Agricultural University identify the pangolin as the potential link that facilitated the spread of the novel coronavirus to humans. The source of the virus is traced to a live animal market in Wuhan, where it is believed to have originated in bats.

The WHO warns against a global overreaction to COVID-19, following panic buying, event cancellations and concerns about cruise ship travel.

18.02

In a critical step toward developing a vaccine, scientists at the University of Texas at Austin announces the first 3D atomic-scale map of the part of the novel coronavirus that attaches to and infects human cells. This comes as the global death toll passes 2 000, almost all of them in mainland China.

19.02

23.02

More than 100 cases are reported in Italy, where northern towns struggle to contain rising infections.

27.02

President Cyril Ramaphosa orders the repatriation of South Africans living in Wuhan, China.

March 2020

Senegal confirmed its first case of COVID-19, marking the second infection in Sub-Saharan Africa.

In South Africa, government spokesperson, Phumla Williams, announces plans to distribute more information on the coronavirus to combat the spread of fake news.

02.03

Nigeria records the first confirmed case in sub-Saharan Africa: an Italian citizen who works in the country, who travelled from Milan to Lagos.

28.02

03.03

President Ramaphosa warns that the underlying weakness in South Africa's economy could be further aggravated by global economic uncertainty amid the spread of the coronavirus.

04.03

Saudi Arabia suspends the year-round Umrah pilgrimage to the holy cities of Mecca and Medina over COVID-19 fears. In Italy, where infections have passed 2 500 and the death toll is at 79, all schools and universities are closed until mid-March to help curb the spread of the virus.

05.03

South Africa records its first case of COVID-19: a 38-year-old male in KwaZulu-Natal who contracted the virus while on holiday in Italy.

06.03

Pharmacies and supermarkets across South Africa run out of stocks of hand sanitisers, face masks, sanitising wipes and hand wash.

“This situation calls for an extraordinary response; there can be

The WHO characterises COVID-19 as a pandemic, as South Africa's confirmed cases increase to 13 amid increased testing.

11.03

The rand plunges to a more than four-year low amid a global sell-off of riskier assets.

09.03

More than 15 million people are placed under forced quarantine in northern Italy as the government approves drastic measures to halt the spread of the virus.

08.03

South Africa records its second confirmed case, as global infections pass 100 000.

07.03

no half measures.” – President Cyril Ramaphosa, 16 March 2020

12.03

Academy Award winner Tom Hanks and his wife Rita Wilson, in Australia for a film project, are among the first high-profile celebrities to test positive for COVID-19.

13.03

Europe is now the epicentre of the pandemic, with more reported cases and deaths than the rest of the world combined (excluding China).

14.03

A South African Airways chartered aircraft, carrying more than 100 South Africans evacuated from Wuhan, lands at Polokwane International Airport. The group is immediately transferred to the Ranch Resort in Polokwane for a strict 21-day quarantine.

15.03

After a special Cabinet meeting, President Cyril Ramaphosa declares a national state of disaster. Non-essential travel and gatherings of more than 100 people are prohibited, and schools are to be closed from 18 March until after the Easter Weekend.

The global death toll passes 10 000.

The US state of California, home to more than 39 million people, is placed under lockdown.

20.03

South Africa's Cooperative Governance Ministry orders all bars, shebeens and some restaurants to close at 6pm.

19.03

Reserve Bank Governor, Lesetja Kganyago, announces a 100 basis point reduction in the repo rate.

Retailer Shoprite limits purchases of some food products and medicines as shoppers strip shelves to prepare for a possible lockdown.

In a session that lasts barely 12 minutes, South Africa's National Assembly officially closes the parliamentary programme until further notice.

In Germany, Chancellor Angela Merkel urges citizens to heed sweeping confinement measures.

18.03

Pick n Pay announces that it will open all of its supermarkets and hypermarkets an hour earlier every Wednesday for customers older than 65 to shop. France enters a national lockdown, with more than 100 000 police officers deployed to enforce the restrictions – an unprecedented number in France during peacetime.

17.03

23 March

President Cyril Ramaphosa announces a nationwide 21-day lockdown, effective from midnight on 26 March until midnight on 16 April. More than one billion people in more than 50 countries and territories are now either under mandatory lockdown, or subject to stay-at-home recommendations.

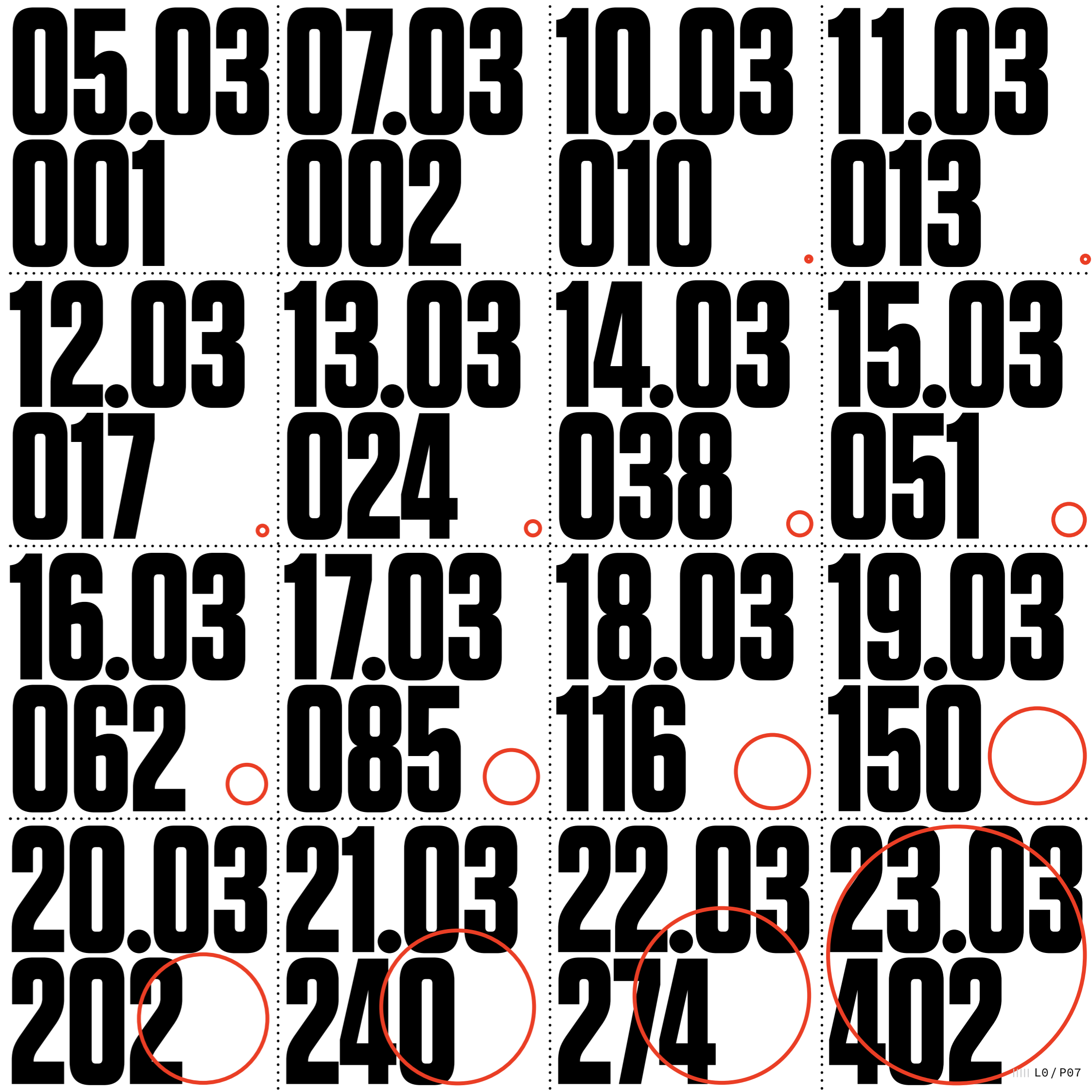
“Fellow South Africans, I am addressing you this evening on a matter of great national importance. The world is facing a medical emergency far graver than what we have experienced in over a century. The World Health Organization has declared the coronavirus outbreak as a global pandemic. There are now more than 162 000 people who have tested positive for the coronavirus across the globe. Given the scale and the speed at which the virus is spreading, it is now clear that no country is immune from the disease or will be spared its severe impact. Never before in the history of our democracy has our country been confronted with such a severe situation. From the start of the outbreak in China earlier this year, the South African government has put in place measures to screen visitors entering the country, to contain its spread and to treat those infected. As of now, South Africa has 61 confirmed cases of people infected with the virus, and this number is expected to rise in the coming days and weeks. Initially, it was people who had travelled out of the country, especially from Italy, who had positively tested for the virus. It is concerning that we are now dealing with internal transmission of the virus. This situation calls for an extraordinary response; there can be no half measures. Cabinet held a special meeting earlier today. After which, due to the serious measures we are going to announce, I have consulted the premiers. We have decided to take urgent and drastic measures

to manage the disease, protect the people of our country and reduce the impact of the virus on our society and on our economy. We have now declared a national state of disaster in terms of the Disaster Management Act. This will enable us to have an integrated and coordinated disaster management mechanism that will focus on preventing and reducing the outbreak of this virus. We will also be able to set up emergency, rapid and effective response systems to mitigate the severity of its impact. Following an extensive analysis of the progression of the disease worldwide and in South Africa, Cabinet has decided on the following measures: Firstly, to limit contact between persons who may be infected and South African citizens, we are imposing a travel ban on foreign nationals from high-risk countries such as Italy, Iran, South Korea, Spain, Germany, the United States, the United Kingdom and China as from 18 March 2020. We have cancelled visas to visitors from those countries from today and previously granted visas are hereby revoked. South African citizens are advised to refrain from all forms of travel to or through the European Union, United States, United Kingdom and other identified high-risk countries such as China, Iran and South Korea. This is effective immediately. Government will continue to regularly issue travel alerts referring to specific cities, countries or regions as the situation evolves, based on the risk level. Any foreign national who has visited high-risk countries in the past 20 days will be denied a visa. South African citizens returning from high-risk countries will be subjected to testing and self-isolation or quarantine on return to South Africa. Travellers from medium-risk countries – such as Portugal, Hong Kong and Singapore – will be required to undergo high-intensity screening.

All travellers who have entered South Africa from high-risk countries since mid-February will be required to present themselves for testing. We will strengthen surveillance, screening and testing measures at OR Tambo, Cape Town and King Shaka International Airports. South Africa has 72 ports of entry in the country which are land and sea ports, and airports. Of the 53 land ports, 35 will be shut down with effect from Monday 16 March. Two of the 8 sea ports will be closed for passengers and crew changes. Effective immediately, all non-essential travel for all spheres of government outside of the Republic is prohibited. We further discourage all non-essential domestic travel, particularly by air, rail, taxis and bus. Secondly, it is essential therefore that we minimise the risk of the spread of this virus by limiting contact amongst groups of people. While we appreciate the economic, religious, and cultural significance of social and community gatherings, the coronavirus is spread through contact between persons. As we have said before, the current circumstances require extraordinary measures to curb the spread of infection. Countries that have heeded the call to implement these radical measures, have fared much better than those that have not. Therefore, to encourage social distancing, Cabinet has decided on these additional measures: Gatherings of more than 100 people will be prohibited. Mass celebrations of upcoming national days such as Human Rights Day and other large government events will be cancelled. Where small gatherings are unavoidable, organisers will need to put in place stringent measures of prevention and control. Schools will be closed from Wednesday, 18 March, and will remain closed until after the Easter Weekend.

To compensate, the mid-year school holidays will be shortened by a week. Government is working closely with colleges, universities and other public facilities such as Parliament, prisons, police stations and military installations to intensify hygiene control. Visits to all correctional centres are suspended for 30 days with immediate effect. Government is aware of the confirmed case of a student who has tested positive for the coronavirus at Wits University. Those who have been in contact with the student will be quarantined. The Minister of Higher Education, Science and Innovation is consulting with Vice Chancellors of universities and colleges across the country and will soon be announcing measures in this regard. We call on all businesses including mining, retail, banking, and farming to ensure that they take all necessary measures to intensify hygiene control. We also call on the management of malls, entertainment centres and other places frequented by large numbers of people to bolster their hygiene control. Thirdly, to further strengthen our health response: Government is strengthening its surveillance and testing systems. We are in the process of identifying isolation and quarantine sites in each district and metro. Capacity is being increased at designated hospitals in all provinces. We are also increasing the capacity of existing contact tracing processes. We are partnering with the private sector to set up a national tracking, tracing and monitoring system of all people infected with the coronavirus and those they have been in contact with.”

The virus spreads
The number of confirmed cases of COVID-19 in South Africa grew exponentially in the days leading up to the declaration of South Africa’s national lockdown. Source: Department of Health



Leading healthcare organisations the world over have, since the World Health Organization’s (WHO) declaration of a global pandemic on 11 March, repeatedly outlined the importance of “flattening the curve” of the COVID-19 outbreak – slowing the rate of spread of infection – through an array of public health measures. In the absence of a vaccine or effective treatment for COVID-19, countries the world over moved to impose so-called lockdowns – defined by the WHO as “stay-at-home orders” and “large scale physical distancing measures and movement restrictions, that can slow transmission by limiting contact between people”. “WHO recognizes that at certain points, some countries have had no choice but to issue stay-at-home orders and other measures, to buy time,” says an October update by the body. “These measures can have a profound negative impact on individuals, communities, and societies by bringing social and economic life to a near stop. Such measures disproportionately affect disadvantaged groups, including people in poverty, migrants, internally displaced people and refugees, who most often live in overcrowded and under resourced settings, and depend on daily labour for subsistence. Governments must make the most of the extra time granted by ‘lockdown’ measures by doing all they can to build their capacities to detect, isolate, test and care for all cases; trace and quarantine all contacts; engage, empower and enable populations to drive the societal response and more.” In October Dr David Nabarro, a medical doctor and WHO special envoy on COVID-19 spoke to The Spectator’s Andrew Neil and said: “We in the World Health Organization do not advocate lockdowns as a primary means of control of this virus. The only time we believe a lockdown is justified is to buy you time to reorganise, regroup, rebalance your resources, protect your healthcare workers who are exhausted, but by and large, we’d rather not do it.” Nabarro goes on to explain how lockdowns have devastating economic effects and emphasises that lockdowns are one of many inputs into the equation of flattening the COVID-19 curve and saving lives. They stand alongside other non-pharmaceutical interventions such as enhanced hygiene practices, wearing of masks, proper hand washing and so on. The point of a lockdown is therefore this – to buy time. And, in South Africa this aim was achieved. Despite the younger average age of the South African population being a favourable risk mitigant, the extent of crowded living conditions and complex comorbidities within the population put the country at risk of a severe COVID-19 experience. During the early phase of the global pandemic, there was, understandably, deep anxiety about these dynamics. However, despite South Africa’s relatively large epidemic, the healthcare system has coped well, with mortality rates lower than in many other countries.

In South Africa and across the world, governments responded to the COVID-19 crisis by implementing a range of containment measures. Quarantines and physical distancing practices to contain the pandemic plunged the world into what the International Monetary Fund called a “Great Lockdown” – a situation which resulted in the worst economic downturn since the Great Depression.

This is largely attributed to South Africa’s early lockdown, which effectively delayed the timing of the national peak, and created staggered regional outbreaks and contained regional attack rates (number of new COVID-19 cases per 100 000 lives) with longer, flatter peaks – easier for healthcare systems to cope with. In countries like the United Kingdom and the United States of America, almost two months passed between the first confirmed case of COVID-19 and full lockdown. South Africa’s early lockdown came only 18 days after the country’s first confirmed case of COVID-19 (on 6 March 2020). On the whole, the lockdown and other non-pharmaceutical interventions implemented effectively, delayed the peak of the pandemic and gave adequate time for the healthcare system and infrastructure to be fully prepared. South Africa’s early lockdown also allowed for time in which evidence-based treatment modalities could be documented and many South African patients benefited from these insights. In April, the BBC heaped praise on South Africa for its “ruthlessly efficient fight against coronavirus”. Correspondent Andrew Harding wrote that, “South Africa seems to have acted faster, more efficiently, and more ruthlessly than many other countries around the world. Heading the fight here against COVID-19, President Cyril Ramaphosa has emerged as a formidable leader – composed, compassionate, but seized by the urgency of the moment and wasting no time in imposing tough restrictive steps and galvanising crucial support from the private sector. And one rung below the president, Health Minister Zweli Mkhize has likewise garnered near universal praise for his no-nonsense, energetic performance, and his sober, deeply knowledgeable, daily briefings.” In the opinion of the United States’ top infectious disease specialist Dr Anthony Fauci,

South Africa certainly got it more right than did his own country, where “the 50 states did it 50 different ways and it just didn’t work”. “We are not pulling together as a unified country, whereas other countries, I believe – including South Africa – do it much more that way,” Dr Fauci told a University of Cape Town webinar in October. “That is what I think the difference is.” By April 2020, more than 3.9 billion people (half of the global population) in more than 90 countries and territories were under lockdown, having been asked or, in many cases, ordered by their governments to stay at home. Lockdown, shutdown, stay-at-home or shelter-in-place orders... By November, COVID-19 had spread from China to over 200 countries with many experiencing second waves of infection, and consequent reinstatement of hard lockdowns, in the third quarter of 2020. Different societies had different names for the lockdown phenomenon, and varying levels of implementation. Public reaction also varied widely across the world. China’s Hubei Province – home to Wuhan’s Huanan Seafood Wholesale Market, widely regarded as Ground Zero of the pandemic – was the first to go under lockdown. Hard lockdown began in Wuhan on 23 January 2020 and ended 76 days later. All flights and public transport were suspended with eight hours’ notice: at 2am the announcement was made; at 10am it came into effect. Non-essential businesses closed and people were confined to their residences. Grocery shopping was prohibited, and the streets were empty, save for a few food delivery vehicles. While there was muted anger in some quarters, the population largely accepted its fate. Conversely, the public reaction to COVID-19 restrictions in the United States was divided along hard political lines. Each state was subject to its own rules, as The New York Times pointed out in early November. “As outbreaks ebb in some areas but grow in

2.6b

Currently, an estimated 2.6 billion people – one-third of the world’s population – is living under some kind of lockdown or quarantine. This is arguably the largest psychological experiment ever conducted.”

Prof Elke van Hoof

others, governors are having to re-close some sectors or consider fresh restrictions, leading to a patchwork of policies across the country,” the Times noted. “The changes – and backtracking – reflect the immense pressure on the nation’s governors to respond to a crippled economy and an anxious public amid a pandemic that shows no signs of slowing in many states.” Many Americans took to the streets – often without masks – to protest the curtailment of their freedoms, with restrictions including stay-at-home orders, bans on public gatherings, and closures of schools, restaurants and non-essential retail. People in Melbourne, Australia, also protested – especially when a second, 111-day lockdown extended across the state of Victoria, ending on 28 October. Businesses and schools closed, residents were largely confined to their homes (bar being allowed one hour of outdoor exercise), and unemployment skyrocketed.

While many Australians followed the rules, widespread anti-lockdown protests turned violent at times. In the United Kingdom the first two cases of COVID-19 were confirmed on 31 January. On 23 March, stay-at-home measures were announced to the nation. People were directed to stay home except for essential purchases, essential work travel (if remote work was not possible), medical needs, one hour of exercise per day (alone or with household members), and providing care for others. The response to these measures was a series of mass protests against the Coronavirus Act, which gave the government wide-ranging powers to issue restrictions to curb the spread of the pandemic. Although the lockdown restrictions eased, protests erupted in September in response to local lockdowns, which were put in place to combat a second wave of virus cases. Many protesters gathered in Trafalgar Square chose not to wear masks, saying these were a restriction on their freedoms. Speaking at that protest, conspiracy theorist Kate Shemirani declared – with no evidence – that COVID-19 was a “hoax” and that its symptoms were “linked to the roll out of new 5G wireless technology”. On 5 November, a new four-week lockdown took effect across England, with areas graded as medium, high and very high risk for COVID-19 spread, and restrictions particular to each put in place. In the United Kingdom and the United States of America, almost two months passed between the first confirmed case of COVID-19 and full lockdown. In South Africa, the nation’s initial 21-day lockdown (later extended) began at midnight on Friday 26 March. “In the days, weeks and months ahead our resolve, our resourcefulness and our unity as a nation will be tested as never before,” President Cyril Ramaphosa said at the time. In the eight days leading up to his announcement, COVID-19 cases in the country had spiked from 51 to 402. An early intervention was absolutely crucial.

A five-level alert system, which would come to define South Africans' lives in 2020, was announced.

05

Sales of alcohol and cigarettes were banned, and citizens were barred from leaving their homes except for essential services: namely to seek medical care, buy (cold) food, toiletries, medicine and other supplies, or to collect a social grant. Those who provided essential goods or services could go to work but they needed a permit to do so. Attending a funeral – capped at 50 attendees – was also allowed but required a permit (close relatives needed a death certificate and permission from the police station or local magistrate to attend).

04

In May, South Africans were allowed to cycle, run and walk within their neighbourhood between 6am and 9am, but they needed to remain within a 5km radius of home. Children who had visited relatives before the lockdown were permitted to move back home. Limited industries reopened under tight restrictions. Takeaway meal deliveries were allowed, as was the sale of certain winter clothing items. Mask-wearing was compulsory in public areas, and a curfew was put in place from 8pm to 5am. People working from home were encouraged to continue to do so.

June saw the lockdown eased to Level 3. Takeaway deliveries continued and collections resumed. E-commerce boomed, and South Africans were allowed to exercise between 6am and 6pm, but not in groups. Non-contact sports resumed, restricted religious services were permitted, and schools began to reopen in their own phased approach. More economic sectors opened, and inter-provincial business air travel resumed. Sit-down meals in restaurants were allowed. Alcohol sales were permitted (subject to restrictions), but cigarettes remained banned. A spike in binge-drinking and related trauma events saw the reinstatement of the alcohol ban mid-July.

03

On 18 August, Level 2 saw restrictions on interprovincial travel lifted, and the local tourism industry slowly reignited. International travel for leisure purposes remained prohibited. Visits to family and friends were now permitted with a maximum of 10 visitors allowed. Hygiene measures aimed at curbing the spread of COVID-19 remained paramount to prevent a second wave of infections. Tobacco sales resumed and alcohol made a second comeback – still subject to regulated hours. Cinemas reopened. Curfew now began at 10pm and ended at 4am. Some normality returned to life.

02

Level 1 was introduced on 21 September, with South Africans now allowed to stay out until midnight. Larger crowds were permitted at events, with numbers based on the size of the venue and on whether the location was indoors or outdoors. There was a partial reopening of international borders and international sporting events resumed, albeit without spectators.

01

FIVE-LEVEL ALERT

09.04.2020

On 9 April, President Ramaphosa once more addressed the nation regarding the national state of emergency (announced on 15 March), extending the nationwide lockdown by a further two weeks beyond the initial 21 days.

The novel Coronavirus

23.04.2020

On 23 April, exactly seven weeks since the first case of the 2019 coronavirus was confirmed in the country, and after a full month of hard lockdown, he announced “a gradual and phased recovery of economic activity” which would be achieved by “a risk-adjusted strategy through which we take a deliberate and cautious approach to the easing of current lockdown restrictions”.

Work from home

Among the many disruptive impacts of the pandemic, the shifts to teleconferencing and remote working were potentially the most long-lasting. Teleconferencing platform Zoom reported revenue growth of 169% for the first quarter of 2020, as it capitalised on global lockdowns. New customer subscriptions brought in 81% of that growth, as the platform reported 300 million daily participants. Videoconferencing platforms like Skype, Teams, Google Hangouts and FaceTime saw a similar explosion in use – and the ubiquity of video calling soon led to what became colloquially known as “Zoom fatigue”. “At one point I was using five different video platforms to keep up with work, classes, and family and friends – my head was spinning,” Laura Dudley, a behaviour analyst at Northeastern University, remarked in May. “We used to take breaks from people by spending time on our gadgets. Now, we take breaks from our gadgets by seeking out real, live human connection.” She spoke for many of us. Work from home even got its own three-letter acronym (WFH), as remote work became part of the “new normal”. By mid-August, a survey by human resources and remuneration firm 21st Century found that more than half of South African employees were still working from home. In September, a global survey of 1 200 Chief Information Officers found that 72% of their workforce was also still working remotely. The latter survey, conducted by Enterprise Technology Research, also found that worker productivity had in fact increased during the COVID-19 pandemic.

A Cisco South Africa survey, titled Remote Working in South Africa 2020 and conducted by World Wide Worx, echoed this finding, but added an important qualifier: increased productivity, it found, was

more true of companies that were already digitally enabled. The study looked at 400 local enterprises and found that the shift to WFH had led to improved productivity in 29% of organisations. However, among companies that had rolled out digital transformation strategies before the pandemic struck, that figure jumped to 70%. All respondents insisted that their employees were sticking to work hours. But was that really true? In June, a survey by workplace consultancy Giant Leap spoke to the employees on the ground – or, depending on their circumstances, on the couch, in the lounge or on the hastily repurposed kitchen table. That survey found that 86% of South African employees wanted to go back to working in an office. While remote work was initially very popular, as time wore on the lines between home and work became blurred to invisibility. “The survey showed 70% of people missed the general social interactions of the office, while 85% said they missed the ‘colleague

interaction’ while working at home,” Giant Leap Director Linda Trim said in a statement. She added that 81% of respondents felt that working remotely made work communication harder, while 70% reported being more sedentary while working at home.

Living under lockdown

While 92% of respondents to an April South African Depression and Anxiety Group (SADAG) survey said they supported the lockdown, some 65% added that they felt stressed or very stressed during it. “COVID-19 and the lockdown has affected many South Africans, and it has had a serious impact on people living with a mental health issue often making their symptoms more heightened. SADAG has been receiving calls from people with no history of anxiety or depression who are feeling overwhelmed, anxious and stressed,” said SADAG’s Operations Director Cassey Chambers. Some 55% of respondents said they’d experienced anxiety and panic; 46% reported financial stress; 40% cited depression; and an alarming 12% reported

feelings of suicide. While the sample size was small (1 214 respondents), the findings were illustrative of the general mood during the hard lockdown. Writing for the World Economic Forum in April, Clinical Psychologist Professor Elke van Hoof said, “Currently, an estimated 2.6 billion people – one-third of the world’s population – is living under some kind of lockdown or quarantine. This is arguably the largest psychological experiment ever conducted.” She called for a “two-tent approach”: one for the wounded and one to treat the invisible, psychological wounds of trauma. “In treating the COVID-19 pandemic, the world is scrambling to build enough tents to treat those infected with a deadly, highly contagious virus,” she wrote. “In New York, we see literal field hospitals in the middle of Central Park. But we’re not setting up the second tent for psychological help and we will pay the price within three to six months after the end of this unprecedented lockdown, at a time when we will need all able bodies to help the world economy recover.” A comprehensive study, conducted by the University of Bath and published in August in the journal *American Psychologist*, was one of the first to substantiate the media debate that the pandemic was causing an increase in anxieties. “The COVID-19 pandemic has caused global uncertainty which has had a direct, detrimental effect on so many people across the UK and around the world,” wrote lead author Dr Hannah Rettie, from the University of Bath’s Department of Psychology. “People have been unsure when they would see relatives again, job security has been rocked, there is an increased threat to many people’s health and government guidance is continuously changing, leading to much uncertainty and anxiety.” Rettie added that anxiety is “a normal response to an abnormal situation such as a pandemic”,

yet underlined that: “For many, as reflected in our findings, anxiety is reaching distressing levels and may continue despite easing of restrictions. It is essential we create service provision to meet this need, which is likely to be ongoing, particularly with current expectations of a second wave.” That second wave would hit Europe in mid-October, leading to renewed lockdowns across the continent and in the UK. Perhaps one of the best ways to explain the experience came through a UK survey, published in the open-access journal *PLOS ONE* in July. In that survey, 80% of respondents said that the social and physical distancing measures put in place during the pandemic had significantly impacted their perception of the passage of time. With the routines and experiences that give colour to our days suddenly on hold under lockdown periods, every day blurred into the next for billions of people across the world. Exercise – either at home during Level 5 or outside when restrictions eased – went some way to solving the mental health crisis. Exactly half of the SADAG survey respondents said that getting some exercise had helped them feel better during the lockdown. Virtual events like the Mzansi Lockdown Marathon, open to anyone who committed to running 42km in 21 days, had over 11 000 entrants running around their gardens, jogging across their balconies or doing shuttle runs in their bedrooms. Those virtual events and the explosion of online exercise video offerings available to people helped to combat the effects of stress eating, which was also common during lockdown periods. In the UK, those whose snacking had increased over lockdown, reported an average 3kg weight gain, according to one survey. An average 2.6kg weight gain was also observed by those who reported lower rates of physical activity.

Exercise was, in many cases, a life saver. Because of the impact of the SARS-CoV-2 virus on the lungs and respiratory system, between 3% and 17% of COVID-19 patients were found to have acute respiratory distress syndrome (ARDS). ARDS severity, in turn, was aligned to the amount of exercise a particular patient was doing, according to a study review by the University of Virginia (UV) School of Medicine. Study author Zhen Yan looked at “extracellular superoxide dismutase” (EcSOD), a powerful antioxidant which locates harmful free radicals. The body’s natural production of EcSOD is further stimulated through just a single session of cardiovascular exercise. “We often say that exercise is medicine,” Yan wrote. “EcSOD set a perfect example that we can learn from the biological process of exercise to advance medicine.” The authors of a study published in the *Journal of Cardiopulmonary Rehabilitation and Prevention* in September summed it up best: “During (and after) the COVID-19 pandemic,” they wrote, “it’s imperative, perhaps now more than ever, that the world finds a way to sit less and move more.”

FORGING

SPACE

BETWEEN

THE POPULATION

UNTIL WE

FELT INVISIBLE

P E

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LE

Despite the restrictions of physical distancing,



_____ people from _____ around the _____ world _____
came _____ together _____ during _____ the
pandemic _____ to offer _____ social _____ and
economic support, _____ and _____ to find _____
solutions _____ to _____ the _____ crisis.

> M O V E

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We all want the economy to come back to life, we want people to return to work, we want our children to go back to school, and we all want to be able to move freely again. But our immediate priority must remain to slow down the spread of the virus and to prevent a massive loss of life.

President Cyril Ramaphosa

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U N I T

Though long days of boredom would follow, South Africa's hard lockdown got off to an entertaining start.

Level 5's first weekend ended, late on Sunday 29 March, with the live streaming broadcast of **Elton John's** iHeart Living Room Concert for America, an international charity music special starring an array of global stars that eventually raised nearly \$8 million for various worthy causes.

Three weeks later, on 18 April, Lady Gaga followed that up with the **One World: Together at Home** benefit concert in support of the World Health Organization.

THERE WAS A CLEAR SENSE, ACROSS THE WORLD, THAT THE PANDEMIC WAS A MASSIVE HUMANITARIAN CRISIS THAT REQUIRED A GLOBAL SOCIAL RESPONSE.

President Cyril Ramaphosa made this clear in his 23 March national lockdown announcement: "Our country finds itself confronted not only by a virus that has infected more than a quarter of a million people across the globe, but also by the prospects of a very deep economic recession that will cause businesses to close and many people to lose their jobs."

By the end of that week, South Africa's sovereign credit rating had been **downgraded to "junk"** status as Moody's - echoing fellow major credit rating agencies Fitch and Standard and Poor's - deemed the country below investment grade.

IT WAS AGAINST THE BACKDROP OF A DEVELOPING GLOBAL HUMANITARIAN CRISIS ON ONE HAND, AND A FALTERING LOCAL ECONOMY ON THE OTHER, THAT PRESIDENT RAMAPHOSA ANNOUNCED THE FORMATION OF THE SOLIDARITY FUND.

The Solidarity Fund represented a united effort to save lives and support the South African economy through the hard lockdown (and beyond) by limiting the ensuing socio-economic fallout. Formed on a foundation of **R150 million** provided by the government, the Solidarity Fund grew through contributions made by South African businesses, organisations and individuals, and members of the international community. It was buoyed by the Oppenheimer and Rupert families, who contributed R1 billion each to assist small businesses and their employees. Independently administered and audited, and operating as a non-profit organisation (NPO), the Solidarity Fund was separate from government and business interests.

Expressly developed to combat the health and social consequences of the COVID-19 pandemic, the Solidarity Fund had three focus areas: **Health Response; Humanitarian Effort; and a Solidarity Campaign.** By the end of October it had raised some R3.12 billion, which was allocated to initiatives including COVID-19 testing, procurement of medical equipment like PPE and ventilators, efforts to mitigate gender-based violence (a spiking trend of massive concern during South Africa's lockdown), a national COVID-19 awareness campaign, and the provision of food parcels.

"It's been a tremendous and inspiring show of national and global unity in the fight against the COVID-19 pandemic and the consequence of the lockdown," Solidarity Fund Deputy Chairperson **Adrian Enthoven** told the media in October.

THE ROAD TO FULL RECOVERY

In his Medium-Term Budget Policy Speech at the end of October, Finance Minister **Tito Mboweni** announced that the national economy would contract by an expected

7.8% IN 2020.

“A sharp – and hopefully short – global recession is underway,” Mboweni told Parliament. **“The International Monetary Fund** expects global output to contract by

4.4% IN 2020,

before rebounding to

5.2% IN 2021

in their October World Economic Outlook.”

REMAINS A LONG ONE

2020 brought a deep global recession, with developing economies like South Africa among the hardest hit.

In 2021, emerging market countries are set to

GROW BY 6%.

Sub-Saharan Africa is **expected to rebound** to growth of

3.1% IN 2021.

**Therein lies
the central
debate
around the
implementation
of South
Africa's hard
lockdown,
and its
unavoidable
impact on
the national
economy.**



As the WHO, International Fund for Agricultural Development (IFAD), International Labour Organization (ILO) and Food and Agriculture Organization (FAO) expressed in a joint statement in mid-October: “The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an **unprecedented challenge to public health,** food systems and the world of work. The economic and social disruption caused by the pandemic is devastating:

**TENS OF MILLIONS OF
PEOPLE ARE AT RISK
OF FALLING INTO
EXTREME POVERTY,
WHILE THE NUMBER
OF UNDERNOURISHED
PEOPLE, CURRENTLY
ESTIMATED AT NEARLY
690 MILLION, COULD
INCREASE BY UP TO
132 MILLION BY THE
END OF THE YEAR.**

**“Millions of enterprises face an
existential threat.** Nearly half
of the world’s 3.3 billion global
workforce are at risk of losing
their livelihoods. Informal economy
workers are particularly vulnerable
because the majority lack social
protection and access to quality
healthcare and have lost access
to productive assets. Without the
means to earn an income during
lockdowns, many are unable to feed
themselves and their families. For
most, no income means no food,
or, at best, less food and less
nutritious food.”

It’s a bleak picture, but one that
has to be seen in the context of
the urgent need to contain a virus
that had, by the time that joint
statement was released, left well
**over 37 million people infected and
more than one million dead.**

What does it take to limit the
rate at which COVID-19 spreads,
or to “flatten the curve” of the
disease? If one were to draw
a line plotting the number of
confirmed cases of COVID-19 on
one axis, and the time since the
first case on the other axis, one
would end up with a hump-shaped (or
“exponential”) curve. “Flattening
the curve” means delaying the
peak of the outbreak so that the
country’s health system is able
to cope with the demand on its
services. This is represented on a
graph by a curve that gently angles
towards its peak, rather than one
that spikes abruptly upward.

FLATTENING THE CURVE

/description/

Delaying the peak of the outbreak so that the country's health system is able to cope with the demand on its services. This is represented on a graph by a curve that gently angles towards its peak, rather than one that spikes abruptly upward.



Flattening the curve was a delay tactic and one that, in South Africa's case, worked very well in giving the health system time to prepare for a national peak, and the country a chance to learn from the global clinical experience on treating COVID-19 optimally.

But it was never a cure on its own. Where people contract COVID-19, another measure became fundamental to containing localised outbreaks.

**THAT'S WHERE
CONTACT
TRACING CAME
IN.**

Contact tracing is the process public health authorities use to control the spread of epidemics and pandemics. It's been an essential part of containing outbreaks such as the Ebola virus in 2014, the 2003 severe acute respiratory syndrome (SARS) outbreak, as well as tuberculosis (TB) and other infectious diseases that are highly contagious.

Contact tracing sees healthcare workers identifying and interviewing those who have contracted a disease to identify their "close contacts": those with whom they have been in close proximity in the recent past, and possibly infected as a result of their close contact. In the case of COVID-19, close contacts can be guided to self-quarantine for 14 days and monitor themselves for symptoms. If a close contact develops symptoms and knows they've been exposed to COVID-19, they can interact with a healthcare expert to seek the right medical assistance while also protecting others from the disease.

Contact tracing is incredibly important in this pandemic, as many people who have COVID-19 have no symptoms (are asymptomatic) or have very mild illness, and do not know that they have COVID-19. This lets them expose others to the virus by accident. They also do not know if they've exposed someone who is at high risk of severe illness if they contract COVID-19.

> F L A T
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V T
R E
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C E H T N




However, traditional contact tracing is a time-consuming, manual process that has its limitations as the person who tests positive for COVID-19 needs to remember all the people they have been in close contact with for the past two weeks and have their contact details. This is not possible for people they come into contact with in public places such as the grocery store or public transport.

In keeping with the global trend of using contact tracing technology to support and significantly enhance manual contact tracing efforts, **South Africa launched the COVID Alert SA app** in early September. The app uses Bluetooth technology and a system of anonymised codes to alert anyone you've been in contact with over the past 14 days when you've tested positive for COVID-19. You get an alert too, if someone you've been in contact with in the past 14 days has tested positive.

Overall, Bluetooth contact-tracing apps, like COVID Alert SA and other similar apps deployed globally, replace the need for individuals who contract COVID-19 to remember and identify close contacts. App users' smartphones keep a digital record of contact episodes. **App users remain completely anonymous** at all times. Privacy is paramount to the process.

“The more South Africans download the app, the more effective it will be in stopping a second wave of COVID-19 infection,” President Ramaphosa said at the app's launch, adding: “I encourage every South African to download this app, which is an important, innovative and necessary part of **protecting ourselves**, our families, our co-workers and our communities.”

There are, of course, holes in the digital contact tracing net.



The app excludes people who don't have smartphones and who don't have the app installed yet. But it's a start. It enables valuable insights into how the virus spreads, and key opportunities for people to understand their exposure risk at all times.

In April, epidemiologist **Dr Cécile Viboud** of the US National Institutes of Health wrote in The Lancet Infectious Diseases journal that: “As we look towards post-lockdown strategies, we should examine the experience of countries that have successfully controlled SARS-CoV-2 transmission or have low mortality (e.g., China, Singapore, Taiwan, South Korea, Germany and Iceland).

**S U C C E S S F U L
S T R A T E G I E S
I N C L U D E
A M P L E T E S T I N G
A N D C O N T A C T
T R A C I N G ,
S U P P L E M E N T E D
B Y M O D E R A T E
F O R M S O F
S O C I A L
D I S T A N C I N G .**

Contact tracing on the scale that is needed for the SARS-CoV-2 response is labour intensive, and imperfect if done manually. Hence new technology-based approaches are greatly needed to assist in identification of contacts, especially if case detection is aggressive. [...] We contend that enhanced case-finding and contact tracing should be part of the long-term response to this pandemic. This can get us most of the way towards control.”

The government of South Korea has been able to keep the coronavirus under control without paralysing its national health and economic systems – and a paper by University of Colorado Denver researcher **Jongeun You**, published in August in The American Review of Public Administration, found that stringent contact tracing was one of the key reasons for that success.

Meanwhile, an Indian study of more than 575 000 people who were exposed to COVID-19 found – through extensive contact tracing – that the continued spread of the virus in the country is driven by only a small percentage of those who become infected. The study, published in September in the journal Science, was the largest contact tracing study conducted in the world for any disease. It found that 71% of infected individuals did not infect any of their contacts, while just 8% of infected individuals accounted for 60% of new infections. It also found that across all age groups, people had a greater chance of catching the coronavirus from someone their own age.

**I N S I G H T S L I K E
T H E S E H E L P
G O V E R N M E N T S
A N D P U B L I C
H E A L T H
O F F I C I A L S T O
S H A P E T H E I R
S T R A T E G I E S
F O R H A L T I N G
T H E S P R E A D O F
T H E D I S E A S E .**

WE ESCAPED
INTO
TECHNOLOGY
WITH
PURE HOPELESSNESS

PE

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```
elif_op  
mirror  
mirror  
mirror  
#sel  
mirror_co  
modifier_o  
bpy.context  
print("Sel
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```
<Intro>  
- all back the deselected mirror modifi  
modifier_ob  
# modifier_ob is the active
```

innovation

<quote>

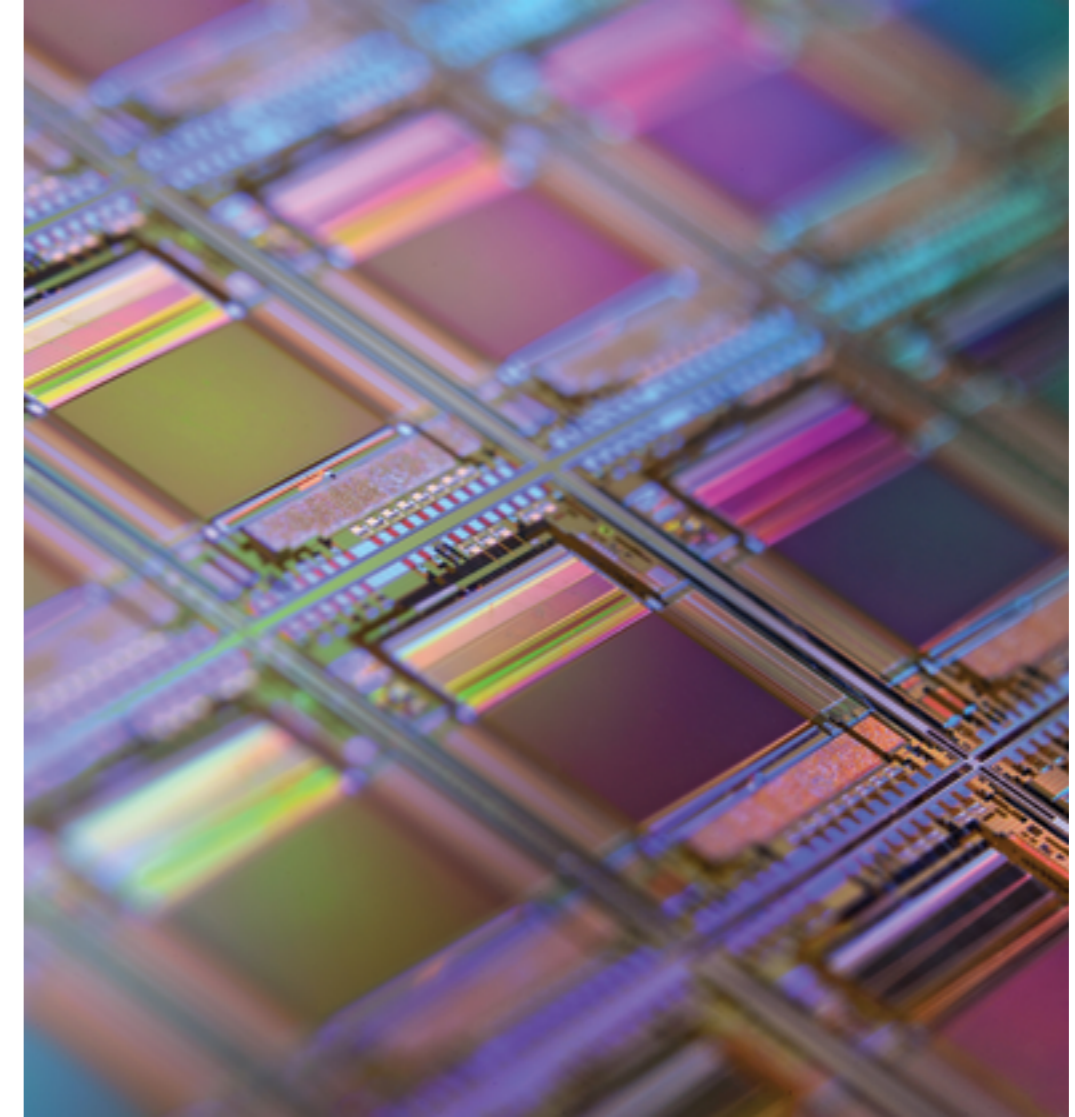
every c_ompan(y)

KNOWS HOW TO PILOT NEW DIGITAL INITIATIVES IN

normal
TIMES,

but very few do so at the scale
and speed suddenly required by the

COVID-19
CRISIS.”



<image>

Never waste a good crisis”,>
<the opportunists might say.
<From e-commerce to remote working,
<distance learning>
<and telehealth,
<the crisis of the
<COVID-19>
<pandemic accelerated
<innovation and digitalisation
at speeds unlike any
other time in modern
<memory.>

IN INTERNET **CIRCLES** THEY CALL IT

the times

before

NOW

THEY'RE FEATURES
OF EVERYDAY

tiktok_videos

AND

WhatsApp_chats.

Looking back, the first few months of 2020 now seem like the distant past, or a period that depicts another world entirely. It was a time before “Work From Home”, before mask wearing, contact tracing and social distancing, before Zoom calls and the need to flatten curves. Back then, terms like **“PPE”**, **“herd immunity”**, **“asymptomatic”** and **“immunocompromised”** were limited to the pages of medical journals and to conversations between healthcare professionals.

Society had to respond to this so-called **New Normal** and respond it did.

While 2020 was a year of deep tragedy (more than 54 million confirmed cases and 1 million COVID-19-related deaths by mid-November), it was also a year of unprecedented innovation.

<paragraph_break>

In July, Cloud provider Twilio published a report in which it described COVID-19 as being “the digital accelerant of the decade”. By Twilio’s estimates, the effects of the pandemic had accelerated companies’ digital communications strategies by a global average of six years... all within the space of barely six months. “Over the last few months, we’ve seen years-long digital transformation roadmaps compressed into days and weeks in order to adapt to the new normal as a result of COVID-19,” wrote Twilio’s Chief Customer Officer Glenn Weinstein. “Our customers in nearly every industry have had to identify new ways to communicate with their customers and stakeholders – from patients to students to shoppers, and even employees – essentially overnight.”

<paragraph_break>

Across South Africa and across the world, millions of office workers moved their workstations to laptops and home PCs, millions of students and schoolchildren logged into virtual classrooms, and millions of shoppers accessed essential (and non-essential) goods via e-commerce platforms. Those who didn’t have access to the tech were, in many cases, left behind. In a time of national and regional lockdowns, digital channels suddenly became the primary (if not only) platforms for engaging with customers, co-workers and classmates. In societies like South Africa, it shone a glaring spotlight on the ever-deepening “digital divide”.

“The COVID-19 pandemic is likely to increase the digital inequality that exists in our country, unless it acts as an ‘external shock’ to policymakers and regulators,” Shamira Ahmed, Principal Researcher at Research ICT Africa, wrote in June. “They need to facilitate a more competitive and enabling environment that addresses developmental goals and transforms the South African ICT sector to better facilitate participation in the digital economy.” The breathless pace of change and innovation only increased the pressure on organisations to continue driving innovation. As McKinsey Digital noted in an Insights piece in April: “If the pace of the pre-coronavirus world was already fast, the luxury of time now seems to have disappeared completely. Businesses that once mapped digital strategy in one- to three-year phases must now scale their initiatives in a matter of days or weeks.”

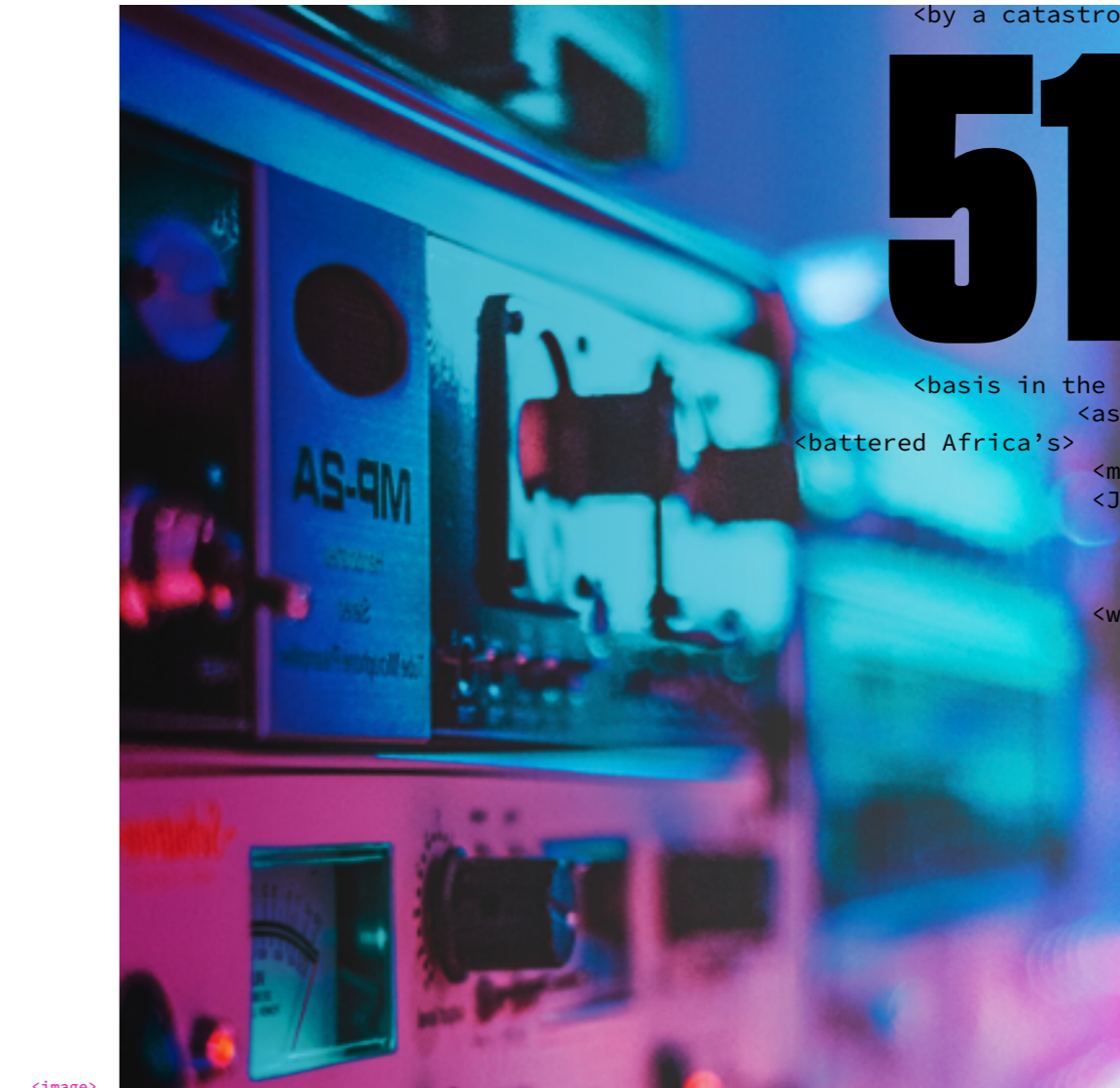
<paragraph_break>

This wave of innovation came, in large part, in response to the pandemic’s devastating effect on the global economy. South Africa was by no means immune. In May, Minister of Trade, Industry and Competition, Ebrahim Patel, told the Parliamentary Committee: “Our work has indicated that the pandemic will affect the South African economy in very deep and significant ways.” By then the International Monetary Fund and South African Reserve Bank were projecting declines in gross domestic product of approximately 6%.

<In September, government data confirmed>
<that South Africa’s economy had contracted>
<by a catastrophic

51%

on an annualised
<basis in the second quarter of the year,>
<as lockdown restrictions>
<battered Africa’s>
<most industrialised nation.>
<Job losses were severe,>
<and household budgets>
<across the country –>
<and across the world –>
<were stretched to breaking point.>



<image>

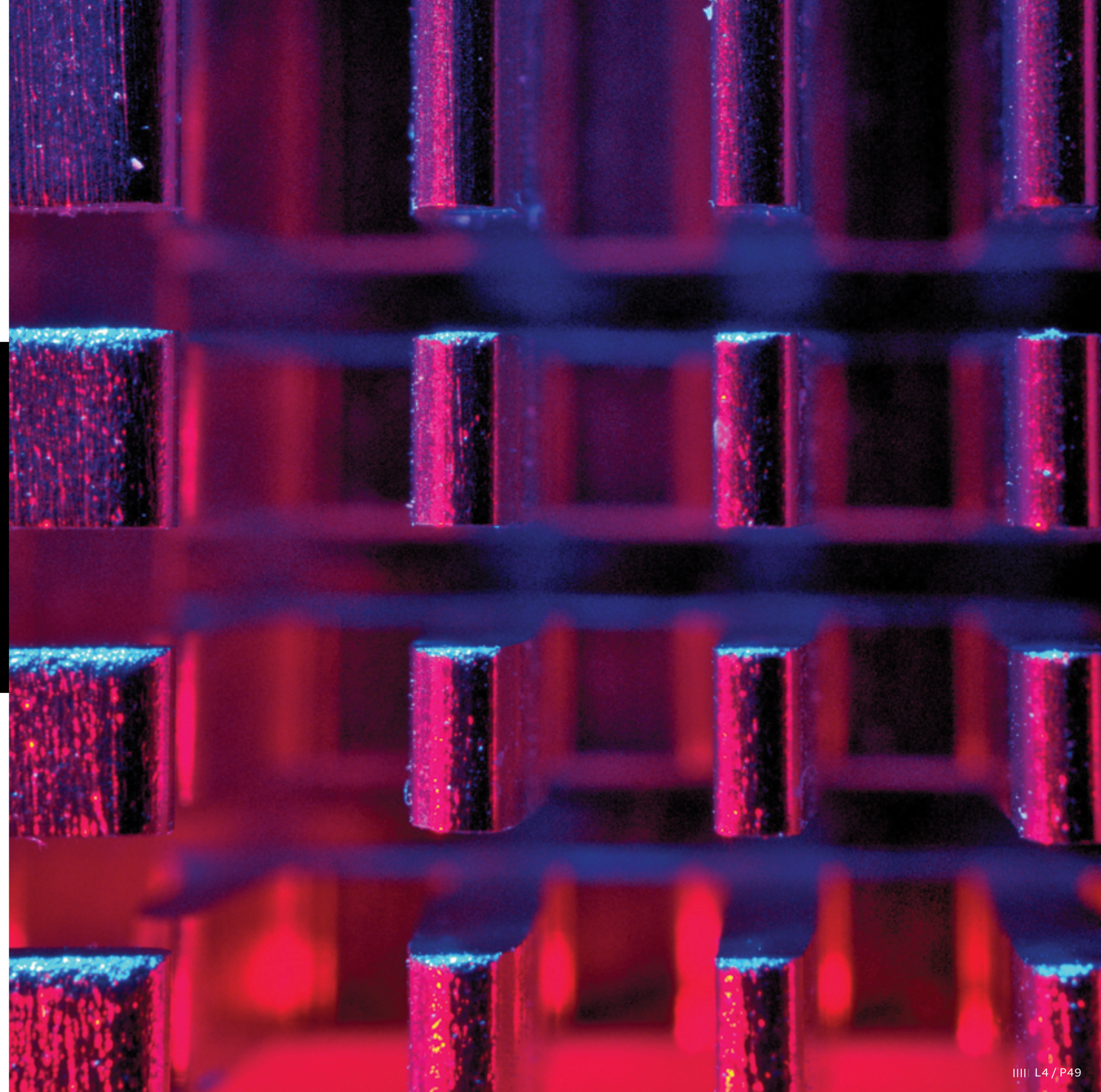
AGAINST THAT BACKDROP

innovation wasn't

a nice_to_have.

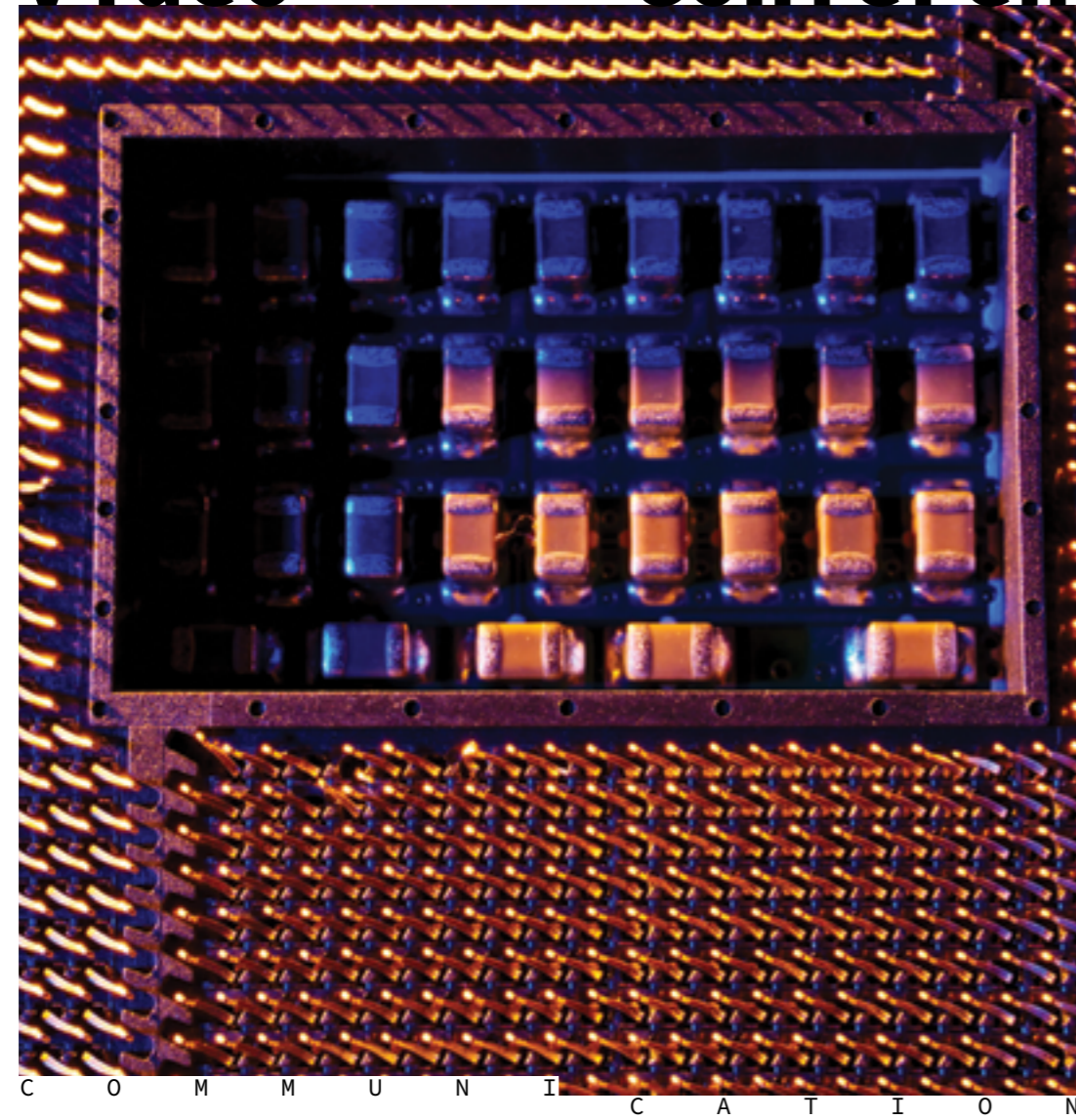
IT WAS AN ABSOLUTE >necessity<

The result is that almost every aspect of work and life (the line between those grew blurrier by the day) has been affected by the digital revolution - communication, the world of work, retail and education more than most.



<subhead>

video conferencing



C O M M U N I C A T I O N

In December

(2019)

videoconferencing platform Zoom boasted a solid, **yet unspectacular,** daily user base of about

10 million

By April

(2020)

it had surpassed **300 million** daily meeting participants.

<quote>

“User cases have grown rapidly as people integrated Zoom into their work, learning, and personal lives,” Zoom CEO Eric Yuan said in a June earnings call.

He was_of course_right.

Client calls, family gatherings, birthday parties... during lockdown, everything seemed to happen in those little windows on our computer screens. Webinars replaced in-person conferences. Live music concerts relocated to the intimacy of Instagram Stories. Skype, Slack and Microsoft Teams became the virtual places where friends, colleagues and church groups met. Google Classroom replaced physical schools. And when Danish soccer team AGF played a top-division game against local rivals in May, it seemed only natural that the

10 000

s_pectators

IN THE STADIUM WERE PROJECTED ON A GIANT VIDEO WALL, WATCHING THE ACTION VIA A VIDEO CALL.



WITH
SHORT WORDS,

President Cyril Ramaphosa changed – perhaps forever – the way South African office workers do their jobs.

<quote>

“Employees who can work from home should be allowed to do so,”

he said as he extended the national lockdown on 23 April, and again on 24 May. <date>

By August, HR consultants 21st Century released a report claiming that, even as the lockdown eased, more than half of company employees were still working remotely. In September, recruitment firm Michael Page Africa published a survey in which 94% of South African-based professionals said their productivity had either increased or stayed the same since making the shift to remote working. About 91% insisted that they felt just as motivated – if not more – in their home office.

Social media giant Twitter, meanwhile, announced in May that it would allow its employees to work from home “forever”. Yet #WFH doesn’t work for everyone. As parenting expert Nikki Bush pointed out at the start of lockdown, “It is work and family all day, every day, and many people don’t have a home office. They may be working from their bedroom, because that’s the only room that closes other than the bathroom. We have to show resourcefulness and resilience over this time.”

<subhead>

The world of

work



E_

Commerce retail

Like many technologies, e-commerce existed long before
COVID-19.

People have been buying and selling on platforms like

Takealot
Gumtree
Amazon

(2011)

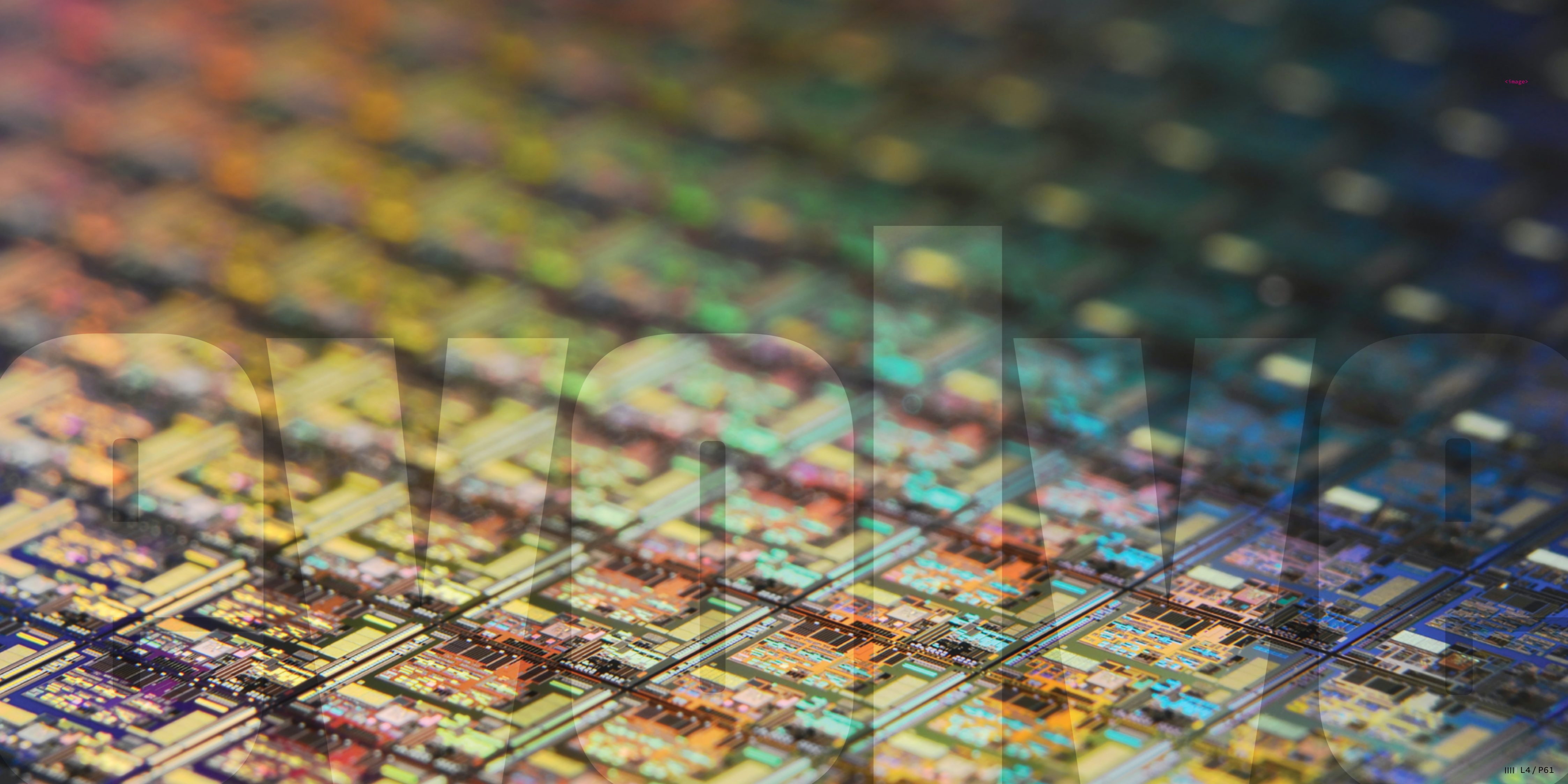
(2000)

(1994)

FOR YEARS

The socioeconomic fallout of the coronavirus 2019 pandemic accelerated the trend, though, in ways that retailers may take years to fully understand. “If customers were on the fence about trying digital experiences, then COVID-19 gave them the motivation to take the leap,” customer experience professional Julia Ahlfeldt wrote in Rogerwilco’s 2020 South African Digital Customer Experience Report. Vutlharhi Valoyi, CEO of on-demand delivery app Zulzi, said in the same report that groceries would play a critical role in driving the growth of e-commerce in South Africa, pointing out that:

“We have seen growth of over 500% during the lockdown and we have maintained the growth even as restrictions eased.” But the explosion of e-commerce isn’t limited to groceries, gadgets, books or clothes. While about 42% of the report’s survey respondents said that they had used websites or apps to improve their health or fitness before COVID-19 reached South Africa, 15% reported doing so for the first time during the pandemic and 21% said they would go online more for health- and fitness-related activities in the future. Those first-time buyers are driving what, at least for now, appears to be an unstoppable trend.



<image>

distance



Learn_ing

While shopping malls>
<and office blocks stood empty
<during the global lockdown,
<so too did schools.
<Here,>
<the impact of digital innovation
<may be the most urgent and the most far-reaching,
<as South Africa's classrooms
<highlighted the deepest
<digital divides.>

E D U C A T I O N
understanding

<quote>

“While the need for distance learning was clear from the outset of the pandemic, achieving effective reach to students was more complex,”

EDTECH AND ELEARNING AFRICA NOTED IN A REPORT PUBLISHED IN SEPTEMBER.

Their survey

1650 IN

respondents -

TOTAL,

drawn from 52 African countries - were asked to list the main obstacles to the effectiveness of distance learning initiatives.

THEIR ANSWERS SUMMED UP THE INEQUALITIES, ISSUES AROUND ACCESS, AND DESPERATE NEED FOR SKILLS THAT THE INNOVATIONS REFERRED TO IN THESE PAGES ARE HOPING, URGENTLY, TO SOLVE.

<Some>

71%

<cited a lack of capacity building, personal development and training;>

49%

<pointed to a lack of affordable and accessible electricity and connectivity;>

<while>

44%

<stats>

<said lack of access to effective infrastructure and technology; and>

30%

<said>

<a lack of access to appropriate ICT devices.>

PERSPECTIVES

BEGAN

TO CHANGE

THE PANIC

INTO KNOWLEDGE

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Understanding COVID-19

When COVID-19 emerged in early 2020, little was known about the disease - let alone how it spread or who was at the highest risk of serious illness. A series of studies, supported by a wealth of data, have brought us to a clearer understanding of what we're dealing with.

PATIENT ZERO

AGE: 38-year-old

GENDER: Male

LOCATION: Hilton, KwaZulu-Natal

Recently returned from a ski trip in Italy with nine fellow travellers.

TUESDAY

3 MARCH 2020

He consulted his doctor with the following symptoms:

- fever
- a cough
- sore throat
- headache
- general malaise

THURSDAY

5 MARCH 2020

the first patient with novel coronavirus 2019 was diagnosed in South Africa.

His positive COVID-19 test result - the first in South Africa - was announced to the nation by Health Minister, **Dr Zweli Mkhize**.

The patient went into isolation, as did his doctor, and a team of contact tracers leapt into action to identify people whom the travelling party might have inadvertently infected.



Given the interconnectedness of our modern world and the ease of international travel, COVID-19 was bound to reach South Africa's shores at some point. Still, few had any idea how fast it would spread. South Africa would reach the end of October with more than 700 000 confirmed cases of COVID-19 (Minister Mkhize and his wife, Dr May Mkhize, among them), and nearly 20 000 deaths. By then, global totals would amount to more than 45 million confirmed cases and more than 1 million deaths.

As the case load grew, doctors around the world scrambled to learn as much as they could about the novel coronavirus 2019.

MILD SYMPTOMS

Throughout the pandemic, one of the many barriers to understanding COVID-19 has been the fact that most of those who contract the virus feel no symptoms whatsoever. And many others have only mild cases of the disease, feeling slightly rundown and experiencing flu-like symptoms:

FEVER

MUSCLE OR BODY ACHES

HEADACHES

(DRY) COUGH

SORE THROAT

COMMON SYMPTOMS

In June, researchers from five universities reviewed the data from 148 separate studies and found that the most common symptoms of COVID-19 were:

FEVER

(experienced by 78% of patients)

PERSISTENT COUGH

(experienced by 57% of patients)

MAJOR SYMPTOMS

Other major symptoms included:

FATIGUE

LOSS OF SMELL AND TASTE

DIFFICULTY BREATHING

LESS COMMON SYMPTOMS

Those findings confirmed the symptoms listed by the World Health Organization (WHO) at the start of the pandemic. At the time, the WHO listed other less common symptoms as:

NASAL CONGESTION

MUSCLE OR JOINT PAIN

CONJUNCTIVITIS

SKIN RASH

NAUSEA OR VOMITING

DIARRHOEA

CHILLS

DIZZINESS

How COVID-19 impacts the human body

As scientists have come to understand COVID-19, a far clearer picture has emerged of how it affects the human body.

Coronaviruses are a large family of viruses known to cause illness ranging from the common cold to more severe diseases such as

(MERS)

MIDDLE EAST RESPIRATORY SYNDROME

(SARS)

SEVERE ACUTE RESPIRATORY SYNDROME

and now

(COVID-19)

CORONAVIRUS DISEASE 2019



Like all viruses, coronaviruses infect the body by entering healthy cells, then making copies of themselves and multiplying.

COVID-19 has spiky surface proteins which bind onto healthy cells through their ACE2 receptors - proteins found on the surface of many cell types.



In fact, coronaviruses get their name from the Latin word for "crown" (corona) because, when viewed through a microscope, they appear to be covered with crown-like spikes.

The coronavirus hijacks healthy cells once it has entered them and takes command, eventually killing some of them.

Severe acute respiratory syndrome coronavirus 2 (or SARS-CoV-2) is the strain of coronavirus that causes coronavirus disease 2019 (COVID-19), the respiratory illness responsible for the COVID-19 pandemic.



COVID-19 is more likely to affect a larger area of the lungs than the common cold because it moves down the respiratory tract, which has more ACE2 receptors in its lower regions than higher up. This is why infected patients' lungs might become inflamed, making it harder to breathe, and why COVID-19 can lead to pneumonia.



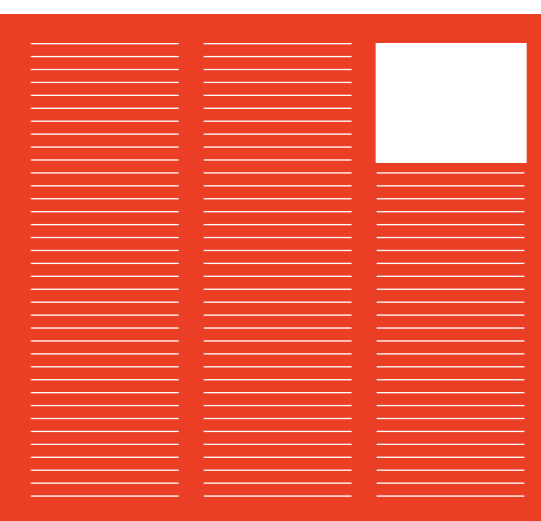
ACE2 receptors are also abundant in other parts of the body including the liver, kidney, parts of the neurological system and the heart. In severe cases, these organs can also be damaged by COVID-19.

Nine months into the pandemic, we knew that in some people COVID-19 resulted in prolonged illness - even in young adults and children without underlying chronic medical conditions.

Should we be concerned about an increase in lasting illness and disability linked to this phenomenon?

AN ARTICLE

PUBLISHED IN THE JOURNAL NATURE IN SEPTEMBER



referred to the "misery of coronavirus long-haulers" in which people continue to battle crushing fatigue and other symptoms of COVID-19 months after their original infection.

WHO

WORLD HEALTH ORGANIZATION

According to the World Health Organization, approximately 10% to 15% of COVID-19 cases progress to severe disease and about 5% become critically ill. While people typically recover from COVID-19 within two to six weeks, for some people symptoms may linger and recur for weeks or months following their initial recovery.



Symptoms

Risk factors for the persistence of COVID-19.

HIGH BLOOD PRESSURE

OBESITY

FATIGUE

COUGH AND CONGESTION

CHEST OR ABDOMINAL PAIN

MUSCULOSKELETAL SYSTEM

SHORTNESS OF BREATH

BODY ACHES

HEART

DIARRHOEA

LUNGS

BRAIN AND NERVOUS SYSTEM

MENTAL HEALTH

MENTAL HEALTH CONDITIONS

HEADACHE

CONFUSION

LOSS OF TASTE OR SMELL

NAUSEA

Health effects

Risks

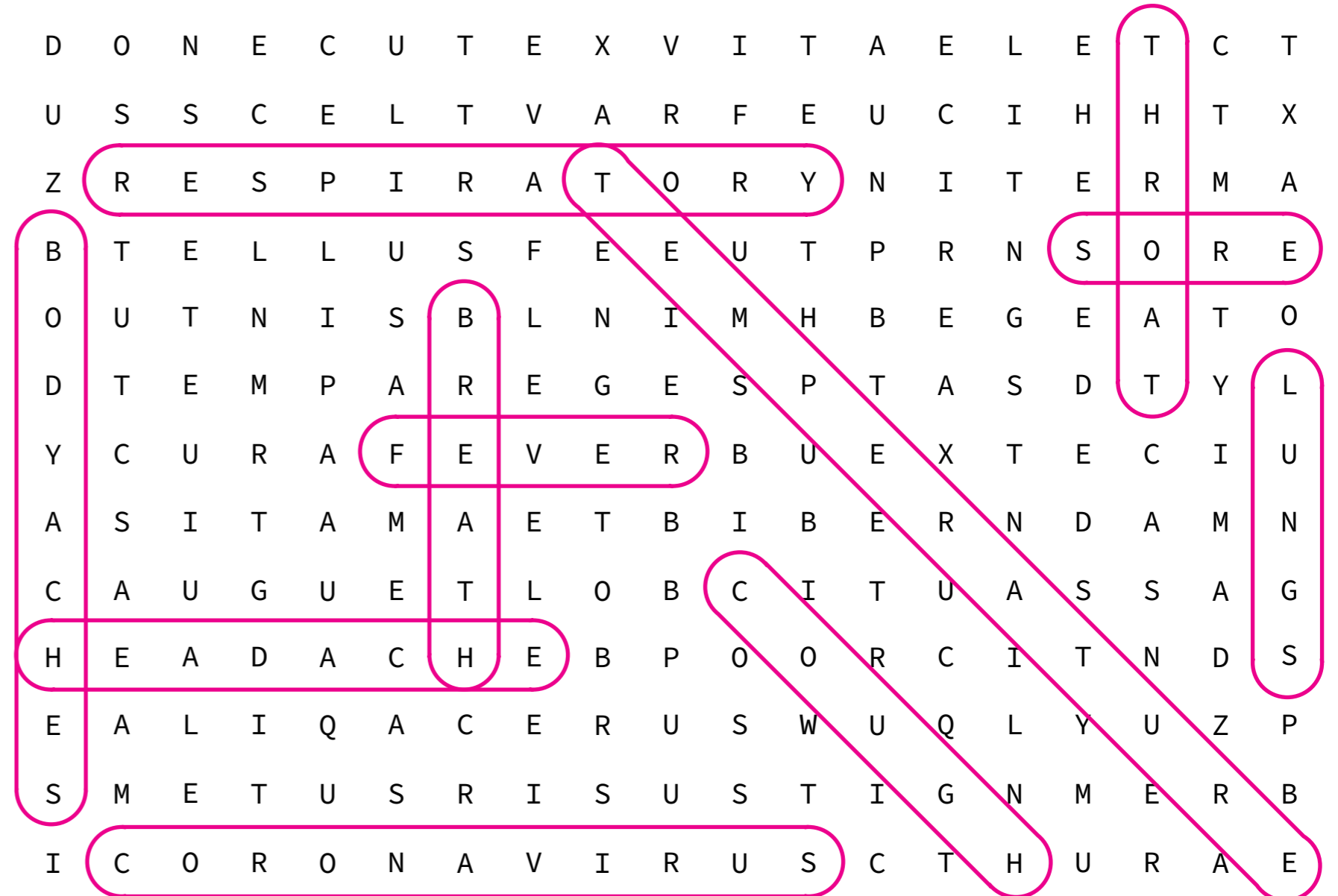
Body systems and organs

There are many case reports from people who do not regain their previous health following COVID-19.

A REPORT PUBLISHED BY WHO

THE WORLD HEALTH ORGANIZATION

states that the recurrence of symptoms following initial recovery can also happen in people with mild disease. They are not infectious to others during this time. The WHO report concludes that more time and research is needed to understand the long-term effects of COVID-19 and the clinical course and likelihood of full recovery. Several new global studies, such as the Post-hospitalisation COVID-19 Study in the UK, are now underway to follow up on people who have been infected with COVID-19 to track their progress long-term, analysing the lasting symptoms that present and improve their long-term health outcomes.



Risks

Throughout the pandemic, scientists have gathered clinical information indicating how the risk for severe COVID-19 (requiring hospitalisation, intensive care or ventilation, and which may result in death) increases with age.

When the US Centers for Disease Control and Prevention (CDC) updated its list of conditions and circumstances associated with an increased risk of severe COVID-19 in early November, they prefaced it with: “We are learning more about COVID-19 every day. The below list of underlying medical conditions is not exhaustive and only includes conditions with sufficient evidence to draw conclusions; it is a living document that may be updated at any time, subject to potentially rapid change as the science evolves.”



At the time, the CDC advised that adults of any age who smoke or who had particular medical conditions were at increased risk of severe COVID-19.

THOSE CONDITIONS INCLUDED:

- cancer**
- chronic kidney disease**
- COPD**
(chronic obstructive pulmonary disease)
- heart conditions**
- a weakened immune system**
(linked to having had a solid organ, blood or bone marrow transplant, HIV, to taking immune-weakening medicines)
- overweight**
(body mass index [BMI] >25kg/m², but <30kg/m²)
- obesity**
(BMI 30kg/m² or higher, but <40kg/m²)
- severe obesity**
(BMI ≥40kg/m²)
- pregnancy**
- sickle cell disease**
- diabetes mellitus**
(both types 1 and 2)

THE LIST ALSO INCLUDES ADULTS OF ANY AGE WHO HAVE:

- moderate to severe asthma**
- cystic fibrosis**
- pulmonary fibrosis**
(having damaged or scarred lung tissues)
- any cerebrovascular disease**
(which affects blood supply to the brain)
- hypertension**
(high blood pressure)
- neurological conditions**
(like dementia)
- liver disease**
- thalassemia**
(a type of blood disorder)

According to CDC figures, in the United States

79%



of COVID-19-related deaths have occurred among patients

OLDER THAN 65.

OTHER COUNTRIES HAVE REPORTED SIMILAR FINDINGS.

The reasons for this are neatly summed up in a report by Dr Lisa Maragakis, Senior Director of Infection Prevention at The Johns Hopkins Health System.

“Older adults are more likely to have long-term health problems that can put them at risk,” she writes. “People’s immune systems also tend to weaken with age, making it more difficult for older people to fight off infections. Lung tissue becomes less elastic over time, making respiratory diseases like COVID-19 a particular concern for older people; and inflammation in older people can be more intense, causing organ damage. (Of course, there is also the risk associated with COPD (chronic obstructive pulmonary disease), chronic airway, and lung diseases.)”

Risk factors

DIABETES

Over time it became clear that people who live with diabetes are at higher risk of serious COVID-19 illness. “Diabetes type 1 and type 2 both cause an increase in blood sugar,” Dr Maragakis explains. “Poorly controlled blood sugar can make viral diseases, including COVID-19, more dangerous, possibly because higher blood sugar can create an environment where viruses are likely to thrive. In addition, diabetes increases inflammation and weakens the immune system, making it harder for people living with the condition to fight off disease in general.”

CANCER

As the Cancer Association of South Africa points out, “Cancer patients and survivors are among those at higher risk of serious illness from an infection because their immune systems are often weakened. The immune system protects the body against illness and infection caused by viruses like coronavirus 2019. Most people diagnosed with cancer have a weakened immune system which reduces their ability to fight infections, because some cancer treatments, like chemotherapy and radiotherapy, can stop the bone marrow from making enough white blood cells.”

OVERWEIGHT

BORIS JOHNSON

UK PRIME MINISTER



who was moved to the intensive care unit in London’s St Thomas’ Hospital after testing positive for COVID-19 in April, would later reflect that his condition “could have gone either way”. He ascribed the severity of his infection to being overweight.

A COLLABORATIVE STUDY

BETWEEN THE UNIVERSITY OF NORTH CAROLINA (UNC), SAUDI HEALTH COUNCIL AND WORLD BANK, PUBLISHED IN AUGUST



noted that metabolic changes caused by obesity (including insulin resistance and inflammation) can make it difficult for individuals with obesity to fight some infections, as uncontrolled serum glucose, which is common in individuals with hyperglycaemia (high levels of glucose in the blood), can impair immune cell function. “All of these factors can influence immune cell metabolism, which determines how bodies respond to pathogens like the SARS-CoV-2 virus,” says UNC Professor Melinda Beck. “Individuals with obesity are also more likely to experience physical ailments that make fighting this disease harder, such as sleep apnoea (which increases pulmonary hypertension) or a body mass index that increases difficulties in a hospital setting with intubation.”

Banned

South Africa's national lockdown, while a necessary and scientifically validated decision, was not popular among all sectors of society. One of the major talking points – especially on social media – was around the ban on the sale of alcohol and tobacco products.

However, there were valid public health and medical reasons for the prohibitions.



ALCOHOL

The alcohol ban aimed to reduce the number of trauma cases typically experienced at local hospital emergency units due to alcohol-fuelled road accidents and violence – and to ensure that South Africa's strained healthcare resources could be allocated to COVID-19 patients. Statistics suggest that the ban on alcohol sales achieved its purpose. When it was briefly lifted in June, trauma-related hospital admissions spiked, and the “booze ban” was promptly reinstated for some months.

TOBACCO

It would take some time for peer-reviewed studies to emerge that directly estimated the risk of COVID-19-related hospitalisation among smokers. However, in May researchers at Baylor College of Medicine, the University of South Carolina and other institutions warned that the significant effect of smoking on ACE2 pulmonary expression indicated “not only an increase in the entry points for the virus, but also may suggest an increased risk for viral binding and entry of the virus in the lungs of smokers”. The tobacco ban was based on advice from the government's own medical experts and the WHO.

The ban on the sale of tobacco products also resulted in another positive outcome: In October Dr Catherine Egbe, a specialist scientist at the Alcohol, Tobacco and Other Drug Research Unit at the South African Medical Research Council (SAMRC), quoted data from a University of Cape Town survey at the virtual 2020 World Lung Conference. “Sixteen percent of those who reported smoking before the lockdown reported quitting during the lockdown,” she said.

Superspreader

Lockdown regulations included limitations on public gatherings.

EVENT GATHERING

SOUTH AFRICA'S LEVEL 1

INDOOR EVENTS

$$480 / \sqrt{16} + 14 + (5+5)^2 + 16 = 250 \text{ people}$$

OUTDOOR EVENTS

$$(320*4) / \sqrt{25} + 217 + 3^3 = 500 \text{ people}$$

These rules aimed to reduce potential infections by reducing contact between people; and - to use another term that most people hadn't heard before the pandemic - to prevent "superspreader" events.

Every pandemic has superspreader events such as these, and for actuaries and epidemiologists they are significant in terms of how they influence the so-called 'R' number.

R NUMBER

As researchers at Sweden's Umeå University explain, an R number (or reproduction number) is a measure of how many people a person who has contracted a virus transmits the virus to, in a previously healthy population. "The higher the number, the more transferable the virus is and the higher the risk for a rapid spread. When the reproduction number falls below 1.0, the epidemic is likely to die out," they indicate. At the time, the WHO estimated the COVID-19's R number to be between 1.4 and 2.5. "That says a great deal about the seriousness of the situation," Umeå University Professor Joacim Rocklöv warns.

February

That's exactly what happened in February when pharmaceutical company Biogen held its annual conference in Boston, United States. At the time the US had fewer than 20 known COVID-19 cases, but - as an article in the journal Science put it - "one of the roughly 200 attendees must have carried the virus". At least **97 people** who attended that single conference, or who lived in a household with someone who did, tested positive for COVID-19.

April

the SAMRC reported the virus's R number to be as high as 3: "Crudely speaking, this means that each infected person is likely to spread the virus to three others."

September



In September, then US President Donald Trump held a White House garden event to announce his nomination of Amy Coney Barrett to the US Supreme Court. The 200 people in attendance were seated close together and most did not wear masks. Nearly a dozen of those present - including the President himself - would subsequently test positive.

March

In March, before South Africa's national lockdown was announced, a week-long prayer event at Bloemfontein's Divine Restoration Ministries became ground zero for a local outbreak after congregants were unwittingly exposed to five international guests from France, Israel and the US who later tested positive for the virus.



Weeks later, track and trace teams were still searching for 286 people who may have been in contact with them. Health Minister, Dr Zweli Mkhize, would subsequently attribute the sharp rise in COVID-19 cases in the Free State to church gatherings.

October

In early October, teenagers flocked to the Tin Roof nightclub in Cape Town to escape their COVID-19 cabin fever. Within days, at least 89 of them - many matric learners - had tested positive for COVID-19. The Western Cape Health Department would later dub the gathering another superspreader event.

To prevent COVID-19 superspreader events, we need to better understand them, Anne Rimoin, an infectious diseases expert at the University of California, Los Angeles, told the Associated Press. "Contact tracing is the way you get to the bottom of a superspreader event," she said. "That's how you break chains of transmission."

Masked

CYRIL RAMAPHOSA

SOUTH AFRICAN PRESIDENT

concluded his address to a worried, locked-down nation on 23 April by pulling on a face mask... only to fumble as the elastic band slipped off his ear and the mask got caught around his eyes and nose. Social media hashtags like #facemaskchallenge and #CyrilMaskChallenge soon started trending, prompting the President to joke the following morning:

For those who were laughing at me yesterday, let me tell you something. I am going to open a TV channel where I will teach people how to put on a mask. You can enrol!

#FACEMASKCHALLENGE

#CYRILMASKCHALLENGE

It was one of many viral social media moments during the long days of lockdown, and it marked the behavioural shift towards mask-wearing and other habits recommended to curb the spread of COVID-19. Setting aside the political debates centred around individual freedoms, mask wearing became a vital tool in the fight against the virus. Data and research backed this up. A Texas A&M University study published in June found that not wearing a face mask dramatically increases a person's chances of infection with COVID-19.

“By analysing the pandemic trends without face-covering using the statistical method and by projecting the trend, we calculated that over 60 000 infections were prevented by using a face mask in little over a month in New York City. We conclude that wearing a face mask in public corresponds to the most effective means to prevent interhuman transmission, and this inexpensive practice, in conjunction with social distancing and other procedures, is the most likely opportunity to stop the COVID-19 pandemic. Our results clearly show that airborne transmission via respiratory aerosols represents the dominant route for the spread of COVID-19,” said study lead Professor Renyi Zhang.

However, as a sign of our growing understanding of the complexity of the virus, a CDC brief released in October held a different view, claiming that “the epidemiology of SARS-CoV-2 indicates that most infections are spread through close contact, not airborne transmission”.

“Diseases that are spread efficiently through airborne transmission tend to have high attack rates because they can quickly reach and infect many people in a short period of time,” the CDC stated. “We know that a significant proportion of SARS-CoV-2 infections (estimated 40% to 45%) occur without symptoms and that infection can be spread by people showing no symptoms. Thus, were SARS-CoV-2 spread primarily through airborne transmission like measles, experts would expect to have observed considerably more rapid global spread of infection in early 2020 and higher percentages of prior infection measured by serosurveys [measurements of the presence of specific antibodies in a given population].” The CDC's available data indicates that SARS-CoV-2 has spread more like most other common respiratory viruses - that is, primarily through respiratory droplet transmission within a short range. “There is no evidence of efficient spread (i.e., routine, rapid spread) to people far away or who enter a space hours after an infectious person was there,” it pointed out.

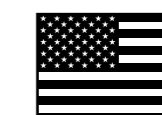
That said, we know that the regions that took an early interest in face masks ended up experiencing milder COVID-19 epidemics. In June, researchers from the Chinese University of Hong Kong wrote a letter to the American Journal of Respiratory and Critical Care Medicine. “In many Asian countries like China and Japan, the use of face masks in this pandemic is ubiquitous and is considered as a hygiene etiquette, whereas in many western countries, its use in public is less common,” they wrote. However, the authors - including Professor Sunny Wong - pointed out a clear negative correlation between the awareness or general acceptance of wearing a face mask and its infection rates. “One classic example is seen in Hong Kong,” Professor Wong wrote.



“Despite its proximity to mainland China, its infection rate of COVID-19 is generally modest with only 1 110 cases to date. This correlates with an almost ubiquitous use of face masks in the city (up to 98.8% by respondents in a survey).”



Similar patterns are seen in other Asian areas, such as Taiwan, Thailand and Malaysia.



To date, there are more than two million cases in the US



and more than one million cases in Brazil.”

“We are not defenceless against COVID-19,” says CDC Director, Dr Robert Redfield. “Cloth face coverings are one of the most powerful weapons we have to slow and stop the spread of the virus - particularly when used universally within a community setting.”

PROFESSOR LINSEY MARR

VIRGINIA TECH

In October Professor Linsey Marr of Virginia Tech, an expert on airborne transmission of viruses, spoke for many of her colleagues when she told the journal Science: “It is important for people to wear masks at all times in public buildings and confined spaces, not only when we can’t maintain social distance. This isn’t just an academic question, but a point that will help reduce transmission if public health officials offer clear and forceful guidance about this.”

THE WHO

WORLD HEALTH ORGANIZATION

supported Professor Marr’s opinion, advising the public that, “Masks should be used as part of a comprehensive strategy of measures to suppress transmission and save lives; the use of a mask alone is not sufficient to provide an adequate level of protection against COVID-19.”

Mask-wearing

HAS BECOME A PROVEN, LIFESAVING, PROTECTIVE MEASURE.

PRESIDENT RAMAPHOSA

President Ramaphosa, in his 23 April speech (ahead of the easing of lockdown measures from the beginning of May), called on all South Africans to “wear a face mask whenever you leave home.” The debates may continue, but the President’s request remains in place for now – and South Africans are listening. As the Department of Health observed in a statement in September: “Step out in South Africa today without a mask and you are likely to be stared at. Social distancing is not easy in a country where our lives are lived in close proximity and are based on social gatherings.

WE PRAY TOGETHER

MOURN TOGETHER

CELEBRATE TOGETHER

AND LIVE TOGETHER

Yet, social distancing, wearing masks and adhering to basic safety and hygiene measures are now woven into the fabric of our new normal.”



OUR
SUPERHEROES
NEVER WORE
CAPES AND IT'S
HONORABLE

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IN 2020, SUPERHEROES DIDN'T WEAR CAPES OR ECCENTRIC COSTUMES — BUT THEY DID WEAR MASKS, FACE SHIELDS, SURGICAL GOWNS AND OTHER PIECES OF PERSONAL PROTECTIVE EQUIPMENT.

Healthcare workers came to the fore during the COVID-19 crisis, earning the appreciation of the entire world. In the face of the pandemic, staying home was not an option for healthcare workers on the frontlines of patient care and research. Caring for others is simply what these individuals do, no matter the challenges faced in doing so. However, behind their resilience, professional dedication and selflessness have loomed some all-too-human fears and stresses – of becoming infected with COVID-19 and of infecting others, and the ripple effect of these eventualities.

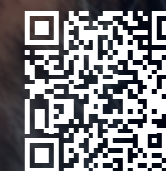
Scan this QR code to view our video documentary on COVID-19.



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Scan this QR code to view our video documentary on COVID-19.



EVERY NIGHT AT 8PM, IN THE EARLY WEEKS AND MONTHS OF THE NATIONAL COVID-19 LOCKDOWN, ORDINARY SOUTH AFRICANS WOULD STEP OUT ONTO THEIR STOEPS AND BALCONIES TO CHEER, BANG POTS AND PANS, AND BLAST THEIR VUVUZELAS FOR A FULL MINUTE, IN LOUD APPRECIATION OF THE NATION'S HEALTHCARE WORKERS.

For New Yorkers, the same ritual occurred every evening at 7pm. People in Italy, France, Spain, Singapore, the UK and dozens of other countries also joined in, with the hashtags #ClapBecauseWeCare and #ClapForCarers trending worldwide. In response, many doctors and nurses – including a few dozen from Cape Town's Grootte Schuur Hospital, who performed the viral Jerusalema dance – took to social media to keep everybody's spirits up.

In April, healthcare workers graced the cover of Time magazine: a prestigious piece of publishing real estate usually reserved for heads of state, titans of industry and icons of culture. "This fight is being waged in large measure by frontline responders," Time's editors noted, "from the medical workers risking their lives to the delivery people and pharmacy employees who aren't able to stay in their homes, to the coroners who are confronting wartime body counts."

South African Health Minister, Dr Zweli Mkhize, summed up what the entire country was feeling when, in a statement to the National Assembly in July, he hailed frontline healthcare workers as "heroes".

A 17 July World Health Organization tweet stated that health workers accounted for 10% of all global infections. Barely a month later, in a virtual press briefing on 5 August, Minister Mkhize told media that more than 24 000 South African healthcare workers had contracted COVID-19, and 181 had died as a result. At the time, the country had 521 318 confirmed cases of COVID-19 and 8 884 deaths overall. This meant that 5% of all confirmed cases stemmed from the experience of local healthcare workers.

"That the men and women carrying out this most noble and sacred of duties are themselves falling ill and dying is a devastating blow," President Cyril Ramaphosa said on 29 June. "They are on the frontline of fighting this pandemic. They are working under great pressure and must carry the psychological strain of knowing they are at risk of contracting the virus. They are the true heroes and heroines of our battle against coronavirus 2019."

"We salute these brave South Africans who leave their homes, families and loved ones to report without fail for duty every day in clinics, hospitals and other health facilities. There they provide medical care, administrative support and other services like cleaning and catering. Just as they perform what is their professional duty, we too have a duty to them and to their families. Their health and their safety must be paramount."

"DOCTORS ARE PORTRAYED AS HEROES, BUT WE'RE ALSO HUMAN. WE KNOW HOW CONTAGIOUS AND HOW DEADLY THIS VIRUS CAN BE." – DR VENESH MOODLEY

That, after all, was the frightening reality: every time a healthcare worker went to work, they put their lives at risk in the face of a disease that – especially in the early days – nobody fully understood. With vast amounts of misinformation in the national and global ether, the need for access to credible clinical information was paramount. Yet, they were going to work not really knowing what they were up against... and increasingly and painfully aware of what its effects looked like.

“Yeah, we’re helping people, but really we’re bearing witness more than anything,” Dr Lakshman Swamy, a pulmonary critical care specialist at Boston Medical Center told The Boston Globe. “People want to describe it like a war zone and we’re these heroes, but really, it feels like you’re walking through a graveyard and you’re watching this horrific stuff happen.”

Durban-based specialist physician and nephrologist Dr Venesh Moodley voiced similar emotions in the early stages of the pandemic. “You know that it’s been happening around the world, but when you’re faced with your first COVID-19 case, it’s disbelief, it’s fear...

Doctors are portrayed as heroes, but we’re also human. We know how contagious and how deadly this virus can be. We’ve taken an oath to help our fellow human beings, and we’re putting our lives on the line and putting ourselves at risk. We have comorbidities ourselves. I’m a chronic asthmatic. The public don’t often realise that.”

Dr Despina Demopoulos, a paediatric intensivist at the Wits Donald Gordon Medical Centre and a Discovery Foundation Awards alumnus, shared similar concerns. “Being at home is difficult for me and for many of my colleagues who have families. We don’t worry so much about ourselves. We worry about spreading infection to our families and our loved ones,” she said as South Africa faced its first wave of COVID-19 infections. “When I come home, I shower outside of the house, and my kids are not allowed to come and hug me. They stand at the garage and wave. Then I soak my scrubs in very hot water and soap, spray and disinfect my keys, spray my car... I follow a planned regime before I can come inside.”

"MY FAMILY IS WORRIED ABOUT ME. I'M WORRIED ABOUT THEM. BUT UNTIL WE HAVE A VACCINE, WE NEED TO PROTECT OURSELVES." – DR CHARLENE DE GREEF

Dramatic photos of healthcare professionals at the frontlines of the pandemic began to emerge early on in 2020. They worked extremely long hours under gruelling conditions that had left doctors and nurses physically and emotionally exhausted. In late March, at a time when the UK was struggling to contain the national COVID-19 outbreak, staff within the National Health Service posted images of themselves holding up signs saying,

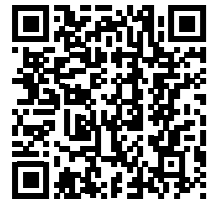


Scan the QR code to view NHS Million post.

"I STAYED AT WORK FOR YOU. PLEASE STAY HOME FOR ME!"

– a sentiment shared by medical personnel across the planet who wished to encourage people to adhere to stay-at-home measures aimed at curbing the spread of infection.

March's first wave of infections left Italian healthcare workers bruised and exhausted, with some taking to social media to share selfies showing marks on their faces and dark circles under their eyes as a result of wearing personal protective equipment- medical masks, goggles and more. "I'm afraid too. I'm afraid to go to work," Alessia Bonari, a nurse from Tuscany, wrote on Instagram.



Scan this QR code to view Bonari's post.

"I'M AFRAID BECAUSE THE MASK MAY NOT ADHERE WELL TO THE FACE, OR I MAY HAVE ACCIDENTALLY TOUCHED MYSELF WITH DIRTY GLOVES, OR MAYBE THE LENSES DO NOT COMPLETELY COVER MY EYES AND SOMETHING MAY HAVE PASSED."

In an accompanying photograph on Bonari's post, her cheeks and forehead bore the bruises of where her protective mask had dug into her skin. "I am physically tired because the protective devices are bad, the lab coat makes you sweat and once dressed I can no longer go to the bathroom or drink for six hours," she wrote.

"I CRIED OF EXHAUSTION, OF DEFEAT. BECAUSE AFTER FOUR YEARS OF BEING AN ER NURSE, I SUDDENLY FEEL LIKE I KNOW NOTHING."

In the United States, too, the healthcare system was overrun by the pandemic. Iowa nurse, Sydney Lane, shared a selfie showing her face bruised and scratched after wearing an N95 mask for 13 hours. She'd worn the same one for more than 12 hours the day before. "I broke down and cried today," she wrote.



Scan this QR code to view Lane's post.

Lane's post gained almost 1 million likes in just four days.

"THERE'S BEEN A LOT OF DISCUSSION AMONG SENIOR COLLEAGUES THAT 20% OF THE DOCTORS WILL NOT MAKE IT THROUGH THIS PANDEMIC. A LOT OF WILLS HAVE HAD TO BE PUT IN ORDER." – DR DESPINA DEMOPOULOS

In early August, Lancet Public Health published a study from King's College London which found that even with adequate personal protective equipment (PPE), frontline healthcare workers still had a three-fold increased risk of testing positive for COVID-19, compared to the general population.

And, according to research published in the British Journal of Medicine in late October, the increased risk faced by healthcare workers extends to those they live with. In a large cohort study (comprising the entire Scottish healthcare workforce), authors compared the risk of COVID-19-related hospital admissions between patient-facing and non-patient facing workers, their household members, and the general population. During the first three months of the pandemic, patient-facing healthcare workers were three times more likely to be admitted to hospital with COVID-19 than their non-patient-facing counterparts.

That risk was doubled among household members of front-facing workers (with analyses adjusted for sex, age, ethnicity, socioeconomic status, and comorbidity).

It's very clear that the need for doctors and nurses to have access to PPE in the early and later stages of the pandemic could not have been more urgent. Yet, many doctors in South Africa and abroad experienced a frightening lack of adequate availability of PPE, particularly in the early stages of the pandemic. The anger felt by many doctors at allegations of fraud and corruption in relation to the provision of PPE in South Africa is understandable. "As doctors, we are on the frontline of fighting coronavirus every day - putting our own and our families' lives at risk every time we report for work to assist the sick," South African Medical Association (SAMA) Chairperson Dr Angelique Coetzee said.

"When medical equipment such as PPE is the focus of an alleged wrongdoing, we expect immediate and urgent action. Unless it is done and seen to be done, irregularities will continue, and continue to burden an already over-stretched health sector."

In hard-hit countries the world over, overstretched healthcare systems have required healthcare professionals to work long hours, while experiencing fatigue, and extreme psychological stress. It was therefore no surprise when frontline healthcare workers started to feel the toll of the pandemic on their mental health. "We all feel really burned out. We just want our patients to be well and for this pandemic to be over," a New York City nurse named Val told Wired magazine. "After almost every shift now when I go home, I break down into tears from all the stress I felt during the day all hitting me at once."

Some doctors would take the decision to isolate from their loved ones during the crisis, separating themselves from their families for fear of passing on infections. For doctors like Dr Moodley, who has a six-year-old daughter, that's easier said than done. "When I get home after seeing patients, I need to get changed out of my clothes in the garage, then head straight to the shower without making direct contact with my family, and while maintaining a two-metre social distancing space," he said in April. "I'm using the spare room. It's not easy. And when will it stop? You can do it for the first two weeks, and you're feeling well and you try to go back to normality..."

BUT IT DOESN'T END."

A survey published in July by the University of California, San Francisco, found that US doctors reported moderate to severe levels of anxiety as a result of the pandemic - including worry about exposing relatives and friends to the virus. "Occupational exposure has changed the vast majority of physicians' behaviour at both work and home," wrote lead author Professor Robert Rodriguez. "At home, doctors are worried about exposing family members or roommates, possibly needing to self-quarantine, and the effects of excess social isolation because of their work on the front line."

TO COMPOUND THE MENTAL
OF DEATH HUNG OVER
LIKE NEVER BEFORE. "YOU HAVE
FINANCES AND THOSE
ORDER," DR MOODLEY
ONE IS EXAGGERATING, BUT
WORKERS THAT ARE
SUCCUMBING TO THE

STRAIN, THE SHADOW
THE WORLD'S DOCTORS
TO MAKE SURE YOUR
SORTS OF THINGS ARE IN
SAID (IN APRIL). "IT SOUNDS LIKE
WITH THE HEALTHCARE
BEING AFFECTED AND ARE
ILLNESS, IT'S A REALITY."

“There’s been a lot of discussion among senior colleagues that 20% of the doctors will not make it through this pandemic,” she said. “So that’s why a lot of wills have to be put in order, a lot of financing, a lot of planning with children. For me, it’s been the ‘What if I don’t make it?’. It’s been a real wake-up-at-three-in-the-morning kind of thing. What’s going to happen to my children, and will everything be okay?”

Then, analysis by Amnesty International released in early September found that, around the world, at least 7 000 health workers had died after contracting COVID-19. The report showed that, at the time, at least 1 320 health workers had died in Mexico (highest known figure for any country), with high numbers of health worker deaths at 1 077 in the USA and 634 in Brazil where infection and mortality rates had been high throughout the pandemic and reported worrying figures in South Africa (240) and India (573), where infection rates had soared in recent months. “For over 7 000 people to die while trying to save others is a crisis on a staggering scale. Every health worker has the right to be safe at work, and it is a scandal that so many are paying the ultimate price,” said Steve Cockburn, Head of Economic and Social Justice at Amnesty International.

And according to the South African National Department of Health, at 15 October, a total of 35 490 healthcare workers had contracted COVID-19 and 338 had died as a result.

In late April, a colleague of KZN-based doctor Lee-Anne Coetzee's tested positive for COVID-19. “I was a close contact, so I had to have a test done,” Dr Coetzee would later recall. Even though she felt no signs of illness at the time, she too, received a positive test result and entered a 14-day period of self-isolation. At first her symptoms presented like a bad case of the flu, but then progressed. “I had one day of severe lethargy, shortness of breath and mild chest pain. That day was the worst of it,” she says. “I had about seven days of feeling quite fatigued and under the weather. After two weeks of self-quarantine, I was feeling much better though.” She still felt breathless at times. And she had been unable to work for those two weeks – of course, there was that, too.

IN EARLY APRIL, DR DEMOPOULOS DESCRIBED THE LOOMING SENSE OF DREAD THAT HAUNTED HEALTHCARE WORKERS IN SOUTH AFRICA AND ACROSS THE WORLD IN THE EARLY STAGES OF THE PANDEMIC.

Millions of South Africans were hit by the economic impact of the national lockdown – and medical practitioners also felt the pinch. “It’s had a huge impact,” Roodepoort GP, Dr Charlene de Greef said in April, describing how the first month of the pandemic had affected her work. “At the general practice level our job is largely to deal with illnesses not related to COVID-19 because the presence of the 2019 novel coronavirus hasn’t made all the other illnesses disappear.”

GPs in general were not equipped to deal with cases of COVID-19. National guidelines stated that for healthcare facilities to accommodate patients with the virus, they had to have separate isolation waiting rooms, separate isolation examination cubicles and, if possible, separate toilet facilities. “Many general practices do not have these isolation facilities available,” Dr De Greef said.

“I use a medical mask continuously, regardless of the type of consultation,” she said. “I work with a plastic apron and gloves and I wear glasses anyway, so I have my eye protection in place.”

SHE – LIKE SO MANY OTHER GPs – HAD TO WEAR SCRUBS AND FACEMASKS TO STAY SAFE AT WORK, EVEN FOR THE MOST ROUTINE PATIENT CONSULTS

In April GP Dr Grant Bekker reported a “significant reduction in revenue” at his Durban practice. “Lockdown regulations materially altered our patients’ health-seeking behaviour,” he said at the time. “I think patients overestimated their COVID-19 exposure risk when shopping for essential goods and services during the lockdown. They also overestimated their COVID-19-related symptoms. Consequently, they have delayed seeking help for the day-to-day illnesses commonly seen in a GP practice. The cases seen at our practice have focused on anxiety, COVID-19-related concerns and, unfortunately, on late presentation and complications of otherwise easily managed conditions.”

Bi-annual surveillance consultations all but stopped among Dr Bekker’s patients who have chronic illnesses. “And in the March-April lockdown period, I had patients delay presenting themselves with a range of conditions because COVID-19 concerns clouded their health-seeking judgement,” he says. “These conditions included malaria, hepatitis, atrial fibrillation, a diabetes-related foot infection and post-hepatic jaundice.”

DR BEKKER AND DR DE GREEF ARE AMONG MANY HEALTHCARE PROVIDERS THE WORLD OVER WHO HAVE MOVED TO VIRTUAL CONSULTATIONS AS A WAY TO SEE PATIENTS, WHILE MINIMISING THE RISK OF EXPOSURE TO COVID-19 FOR PATIENT AND PROVIDER.

While 2020 will be remembered as the year in which the COVID-19 pandemic took hold of the world, it will also be remembered as a watershed year for innovative, safe and affordable ways of accessing healthcare. A world adhering to physical distancing and other measures aimed at curbing the spread of the pandemic, turned to digital healthcare solutions – which seem set to outlast the pandemic. Prior to 2020, digital healthcare delivery was closely linked to telemedicine, or the use of electronic communication to provide healthcare services to remote patients. Post-2020, access to healthcare through digital technologies that span the care continuum, has come to the fore.

“There are three roles for telehealth technologies in this crisis,” says Professor Cristoffel Grobler, who heads up the clinical unit at Elizabeth Donkin Hospital, and is an associate professor at the Walter Sisulu University and a research associate at the Nelson Mandela University. “The first is to screen patients remotely, rather than having them visit the practice or hospital,

thereby lowering the risk of transmission to other patients and healthcare workers.

“The second is to provide routine care for patients with chronic diseases who are at high risk if exposed to the virus, and also continuing care for patients with chronic disease including mental illness.

“The third is counterintuitive but just as important. Doctors are not immune to infection but are at increased risk of contracting COVID-19. If a doctor tests positive but has no symptoms, he or she can still provide a service from the safety of their home while still in quarantine, by using telehealth.”

The wave of cutting-edge digital healthcare solutions that have come to the fore in 2020, benefit access to healthcare as a whole, as they facilitate on-demand access to high-grade clinical and diagnostic consultations, anytime, anywhere; better chronic healthcare delivery and management with live, two-way virtual communication channels between patient and


healthcare provider; and high quality, hospital-level acuity care offered in the comfort and safety of one’s own home.

Powerful examples of what's possible include smart devices such as connected glucometers, which enable healthcare providers to remotely monitor their patients’ health metrics through an integrated platform that immediately alerts the doctor to any out-of-range readings; and biosensor patches which, when worn by a person receiving acute hospital-level care at home, relay vital sign readings to a dedicated healthcare unit which can monitor and ensure effective recovery.

Before 2020 the use of telehealth in South Africa was limited by restrictive Health Professions Council of South Africa regulations. Telemedicine was seen as an add-on and not a replacement for in-person consultations.

Pandemic-driven necessity, however, proved to be the mother of invention – or, at least, of what research firm Frost & Sullivan are calling “a tsunami of growth” in the telehealth market. Their forecasts see a year-on-year increase of 64.3% in telehealth in the US alone in 2020, with further predictions pointing to a massive seven-fold increase by 2025.

VIRTUAL CARE PLATFORMS HAVE NOT ONLY ENABLED HEALTHCARE PROVIDERS TO SEE PATIENTS REMOTELY, BUT ALSO ALLOWED THEM TO BRIDGE THE EARNINGS GAP EXPERIENCED OVER 2020.



Doctors are human. They have families, they have fears. They have businesses to run and accounts to pay. Yet, as one reflects on the work done by those healthcare workers in 2020 - in emergency rooms, in consulting rooms, and via virtual consultations on computer screens - one can't help but applaud their superhuman efforts through this crisis.

Coming back to the impact on doctors themselves and, echoing what others in the healthcare field are saying, Dr De Greef says that the pandemic has impacted her family in the sense that, "We are concerned about each other. My family is worried about me. I'm worried about them. But until we have a vaccine, we need to protect ourselves."

**WHETHER IT'S 8PM
OR NOT, STOP WHAT
YOU'RE DOING AND
MAKE SOME NOISE
FOR THEM.**

Personal space

And

popular practice

Became comfortable

Pe

op

le



Future

The COVID-19 pandemic will continue to define life as we know it for some time to come, and while uncertainty will persist, we are able to reflect on what we have learned and what we have to look forward to.

CYRIL RAMAPHOSA
President of South Africa

“Our response to the COVID pandemic has demonstrated
the heights that can be attained when we work

in the spirit of
friendship and solidarity.”



MUKHISA KITUYI
Secretary-General: (UNCTAD)
United Nations Conference on
Trade and Development

“The COVID-19 pandemic has accelerated
the shift towards a more digital world.

The changes we make now will
have lasting effects as the world
economy begins to recover.”

PROFESSOR ERIC TOPOL
Scripps Research
Institute

“I’m optimistic that with the right leadership we will
model and get more people in the country to use the
measures that we need to do, like wearing masks, trying
to keep distance, avoiding crowds... If we get things on
track we can prevail over this.

I’m confident of that.”

MAURICIO CÁRDENAS
Visiting Research Fellow
Center on Global
Energy Policy: Columbia
University

“The pandemic was foreseeable and its devastating
effects are increasing our alertness to other trends
that could have similar or even worse outcomes.
Increased concern for our health, and that of the
planet, may lead to decisions that actually combat
climate change.”



“The impact of COVID-19 will be
long-lasting.”

DR LISA IPP
Associate Professor
Paediatrics:
Weill Cornell Medicine

“I believe we will alter our social interactions
for a long time to come, including less face-to-face
encounters. And, the days of mask-wearing have no clear
end in sight.”

a combustible cocktail of "misinformation"

PROFESSOR GILBERT KHADIAGALA

Director: Centre for the
Study of the United States,
University of Witwatersrand

“The social media dimension of COVID-19 has
unleashed a combustible cocktail of misinformation
and fake news that now pervades the public space,
imperilling effective crisis management measures.”

PROFESSOR ERIC KLINENBERG

Director: Institute for
Public Knowledge, New York
University

“The coronavirus 2019 pandemic is going to cause immense
pain and suffering. But it will force us to reconsider
who we are and what we value, and, in the long run, it
could help us rediscover the better version
of ourselves.”

JAMES MANYIKA

Chairman:
McKinsey Global Institute

“The world after COVID-19 is unlikely to return to the
world that was. Many trends already underway in the
global economy are being accelerated by the impact of
the pandemic. This is especially true of the digital
economy, with the rise of digital behaviour such as
remote working and learning, telemedicine, and delivery
services. Other structural changes may also accelerate,
including regionalisation of supply chains and a further
explosion of cross-border data flows.”

It's clear that in a crisis, the
rules don't apply –

ASTRA TAYLOR
Filmmaker

which makes you wonder why they are rules in the first place. This is an unprecedented opportunity to not just hit the pause button and temporarily ease the pain, but to permanently change the rules so that untold millions of people aren't so vulnerable to begin with.”





“The pandemic is a clear test of international cooperation

ANTÓNIO GUTERRES
Secretary-General:
United Nations

- a test we have essentially failed. It has killed nearly one million people around the world, infected over 30 million, and remains largely out of control. This was the result of a lack of global preparedness, cooperation, unity and solidarity.”

BILL GATES

Cofounder: Microsoft

“You have to admit there’s been trillions of dollars of economic damage done and a lot of debts, but the innovation pipeline on scaling up diagnostics, on new therapeutics, on vaccines is actually quite impressive. And that makes me feel like, for the rich world, we should largely be able to end this thing by the end of 2021, and for the world at large by the end of 2022.

That is only because of the scale of the problems that’s taking place.”

JOHN GOODWIN

CEO: The LEGO Foundation

“Decisions in the coming weeks and months could prove pivotal in enabling or hindering a generation of young people – from securing meaningful employment to having the skills and knowledge they will need to solve the many future challenges our world will face. As millions of children are likely to remain without a stable physical classroom for the foreseeable future, we face the very real threat that virtual curricula will focus solely on literacy and numeracy rather than engaging, hands-on activities that help foster a breadth of essential skills.”

DR ANTHONY FAUCI

Director: US National
Institute of Allergy
and Infectious Diseases

“Despair makes you throw your hands up and say, it doesn’t matter what I do, what’s going to happen is going to happen. That is incorrect. It does matter what we do. And if we do it for a while longer, we will look behind us and the outbreak will be behind us, not among us.”

MELISSA FLEMING

Under-Secretary-General
for Global Communications:
United Nations

“It is increasingly clear that we cannot successfully tackle the pandemic without also addressing online misinformation. Each and every one of us can help break the chain of misinformation by pausing before we share.”

DR TEDROS ADHANOM

Director-General: (WHO)
World Health Organization

“This pandemic is playing out differently in every country and in every community, but there are some constants: health systems matter, preparedness matters, and doctors, nurses, and health workers must have the training and equipment they need. These have been fundamental to how countries and communities are weathering this pandemic.

The lesson is clear:
A strong health system is
a resilient health system.”

