

FAMILY DOCTORS ON THE FRONT LINES OF COVID-19 PANDEMIC

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Singapore confirmed its first case of COVID-19 on 23 January 2020, just two days before Chinese New Year. The COVID-19 outbreak was declared a Public Health Emergency of International Concern on 30 January 2020 by the World Health Organization (WHO), and named as COVID-19 on 11 February 2020. COVID-19 is affecting everyone in every part of the globe. As an open, global economy, Singapore has not been spared from the pandemic. At the time of writing this editorial, on 19 June 2020, Singapore had 41,473 confirmed cases and 26 deaths.

Family doctors are on the front line of medical care in COVID-19 – both during the acute phase and also in dealing with the sequelae of the illness. In fact, WONCA's theme for World Family Doctors' Day 2020 is most appropriate – "Family doctors on the front line". Family doctors in Singapore have been called upon to serve in almost all settings, primary care, in the dormitories, Swab Isolation facilities (SIFs), Community Recovery Facilities (CRFs), Community Hospitals and acute hospitals. Together with public polyclinics, 949 clinics participated as Public Health Preparedness Clinics (PHPCs) to provide dedicated care to patients with acute respiratory illness. As family doctors, we can be proud of our contributions to this global fight against COVID-19. The College of Family Physicians Singapore (CFPS) had also played a leading role in coordinating dialogues between our family doctors and the Ministry of Health (MOH). CFPS provides a communication channel that has fostered trust and communication between our frontlines and MOH planners. This is critical because there will be fear, uncertainty as potentially infectious COVID-19 patients walk through our consultation doors, and concerns over supply of personal protective equipment. CFPS organized a series of Sunday night webinars on resilience during the COVID-19 pandemic that were well-received by both family doctors and specialists. These will be described in greater detail by Professors Cheong Pak Yean and Goh Lee Gan in their guest editorial. We thank CFPS for this special edition of "COVID-19: Singapore Experience".

In Unit 1, Dr Thirumorthy wrote about the fear of contagion among frontline healthcare professionals, while fulfilling their commitment to continue serving their patients and the community in dealing with the infectious epidemic. Dr Thiru's article applies the principles of professional ethics to the keeping of frontline healthcare professionals safe and empowered to continue discharging their professional duties and responsibilities. Central to this is the healthcare professional's wellness and professional resilience.

The COVID-19 outbreak touches the vulnerabilities of frontline doctors. The scope of their inner experiences includes fear/anxiety, uncertainty, isolation, fatigue, moral distress or outrage. Learning how to manage the inner subjective experiences can improve the doctors' capacity to serve at the frontline. In Unit 2, Dr Tan Yew Seng shared on a method "RAIN" to contain and process fear and other unsettling

emotional states: Recognise, Allow, Investigate and Nurture. Dr Tan's article described a framework that provides a narrative for groundedness, which comprise the elements of faith in the medical science and our practice, due diligence that supports the faith, acting with courage and compassion, and the focus of another- or community-directed service.

In Unit 3, Dr Julian Lim provided an allegorical poem that describes the fears and uncertainties faced by himself in the COVID-19 circuit breaker period, from compliance to health advisories as understanding of the contagion evolved, from conflict of responsibilities to family, patients and teaching, and from managing the CME points requirements of the resilience webinars. Four bonsai compositions of legendary Chinese figurines are used as metaphors for the themes of the webinars. I am sure you will find the poem an interesting read.

In Unit 4, Dr Wong Chiang Yin explained basic communicable disease epidemiological concepts such as Reproductive Ratio, Serial Interval and Incubation Period. Dr Wong's article also demonstrates the effects of exponential growth on cluster size. We hope these concepts will help our readers to better understand the "disease dynamics" of COVID-19, and so enable us to understand better the policies and practices employed to combat COVID-19, e.g. social distancing, personal hygiene and mask-wearing.

In Unit 5, Dr Grace Chiang spoke about loneliness and isolation in family medicine. She mentioned that the emotional stressors, societal challenges and unique physician specific stressors such as greater risks of contagion, a rapidly evolving practice environment and ever-changing protocols and regulations brought on by the COVID-19 pandemic have placed family physicians at greater risks of physician isolation and loneliness. Dr Grace proposed establishing and strengthening connections with oneself, peers and patients, and connecting as a family medicine fraternity to prevent isolation and loneliness.

In Unit 6, Prof Kua Ee Heok touched on the mental health effects of the COVID-19 pandemic on patients and caregivers, such as fear, anxiety, burnout and isolation. Prof Kua's article advised that anxiety can be allayed by attention to habits of mental resilience both in ourselves and taught to anxious patients to help them cope better. Similarly, having a team or circle of friends whom we can tap on to help us cope can prevent burnout. Please read Prof Kua's article for more tips!

In this bumper issue, A/Prof Goh Lee Gan has also selected 20 current readings on topics related to COVID-19, and categorised them into two sections, Public Health Experience and COVID-19 infections seen in tertiary care institutions and primary care. In the section on public health experience, readings include COVID-19 outbreak, transmission, therapies, measures to tackle COVID-19, exit strategies, COVID-19 outbreak in the migrant population in Singapore, the role of community mask wearing, efficacy of face masks and respirators, and cloth masks versus medical masks. In the

section on COVID-19 infections, readings include understanding the pathophysiology of COVID-19 infections, the epidemiological and clinical predictors, the psychological impact and coping responses, practical management recommendations in diabetes mellitus patients with COVID-19, the importance of staff temperature and sickness surveillance, COVID-19 case series from our own primary care doctors in Singapore.

In this issue, we also have a bumper crop of 3 original articles and 4 case reports related to COVID-19. The first original article is by A/Prof Goh Lee Gan and A/Prof Cheong Pak Yean, who shared on the College's early experiences, lessons and highlighted the potential of online learning in achieving educational continuity under COVID-19. Both authors shared key pointers that improved viewer ratings such as a good internet connection, speaking to the microphone of transmitting devices, and speaking within audible distance between speaker and devices. Monitoring chat boxes for audio glitches and timely actions also helped to ensure quality of each session. The second original article by Drs Han Xiao, Seow Chze Kian and Ong Chooi Peng is a narrative review on technological advances and medicine in light of COVID-19. This narrative review provided a historical context to the adoption of technology and of technical developments in Singapore, and discussed the impact of disruptive technology in healthcare. The authors proposed that vigilance, swift responsiveness, cross-domain nimbleness, and generous collaboration will all be vital to leveraging such technology disruptions for unannounced crisis like the COVID-19 pandemic. The third original article by Dr Nicole Sieow and A/Prof Mariko Koh is on asthma management in times of COVID-19. Their article provides practical tips and outlines the recommendations by Global Initiative for Asthma (GINA), British Thoracic Society (BTS) and National Asthma Council Australia (NACA) which are relevant to primary care management of asthma in light of the COVID-19 pandemic.

The first case report is by Dr Joe Ting on an atypical presentation of COVID-19 in an elderly patient. This case highlighted how an elderly patient with two to three weeks of low-grade fever of unknown origin was picked up with a high index of suspicion and the family medicine resident was able to assess the patient holistically and admit her to the right discipline with the proper contact precaution. The second case report by Dr Nicole Tay and Dr Angelia Chua highlighted a patient with COVID-19 pneumonia complicated by transaminitis. The article also discussed the evidence for non-pharmacological approaches, such as prone positioning, and pharmacological management, such as Hydroxychloroquine and Azithromycin. The sensitivity and specificity of COVID-19 swab tests, the association between COVID-19 infection and specific acute phase laboratory markers and current known evidence versus ongoing controversial debates revolving around the topic of COVID-19 infection was also discussed. The third case report by Dr Chen Tong Yuan and Dr Angelia Chua described an adult patient with severe community acquired pneumonia secondary to

COVID-19 infection seen in a local primary care facility. The article reflects on the challenges faced such as staying vigilant and the mental stress of waiting for the patient's COVID-19 status and offers suggestions to aid future encounters. The final case report by Dr Goh Jun Heng and Dr Angelia Chua is on the importance of detecting tachycardia for the timely identification of COVID-19 patients with worsening clinical conditions. This is especially important without the aid of a bevy of sophisticated diagnostic aids in the austere setting of a medical outpost. The holistic approach to managing this unique group of patients involves developing an approach that balance information gathering and clinical reasoning to manage patients with tachycardia safely in an outpatient dormitory setting.

Finally, on behalf of the editorial team, we hope you have enjoyed the articles generously contributed by our family physicians and partners. There will be more COVID-19 related articles in subsequent issues, with COVID-19 remaining a public health concern for the foreseeable future. We would like to wish all our members good health and success as we continue to fight this invisible enemy in COVID-19.

COVID-19 SINGAPORE EXPERIENCE (GUEST EDITORIAL)

A/Prof Goh Lee Gan & Cheong Pak Yeap

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Three connected events acted in concert to culminate in this COVID-19 issue in the Singapore Family Physician with the theme of COVID-19: Singapore Experience.

First, the successes in educational continuity efforts

With the community spread imported cases of COVID-19, social distancing was introduced and all Postgraduate FM CME events had to be conducted through virtual conferencing. The decision to work on educational continuity is now history. It was not so in January when Singapore had its first case of COVID-19 in a local patient who had not visited Wuhan. This signaled local community spread and it was a matter of time that social distancing will put an end to the face-to-face the GDFM workshops, the MMed tutorials and the Fellowship College Fellowship teaching sessions. The journey taken to ensure educational continuity is described by both of us in Original Paper 1 of this issue of the Singapore Family Physician.

Second, is the available technology for on-line teaching

Singapore has come a long way since the SARS Webinar. A large party of us (see accompanying article on Webinar Chronicles) staged a SARS Webcast on 24 May 2003.

At the beginning of 2020, there are already several conferencing systems available for on line meetings. It did not take much of a brainwave to use one of these tools to broadcast the teaching activities of the College. Of the available video conferencing software, the one that could meet the needs of running meetings with hundreds of participants and also one whom most of us had some experience using is the Zoom meeting software.

It performed well and as we got to know how to use it better, the software has been used by our College hosted programmes. Two Webinars sponsored by AstraZenca had an attendance of 880 participants. These have been reported by Dr Nicole Seow and A/Prof Mariko Koh (see Original article number 3 in this edition); and Dr Bennett Ong, Prof Mariko Koh, and our President, Dr Tan Tze Lee (see Original article number 4 in this edition).

Third, the Resilience Webinars

These were four Webinars aimed to build resilience in Frontline doctors. As a group of healthcare providers, frontline doctors have to grapple daily with the ability to identify early cases and isolate such patients suffering from COVID-19 infection and refer them to NCID for further management. At the same time these frontline doctors need to remain safe and grapple continuously with the fear of being infected. These Resilience Webinars were conducted on 12, 19, 26 April and 3 May 2020 and attended by about 400 doctors each. (see accompanying article on the Webinars).

The twin tasks of prevention in these COVID-19 times

In a commentary in the April Issue of the Annals of Medicine Singapore, Dr Cyrus Ho, Cornelia Chee, and Dr Roger Ho noted that in disease outbreak, public health authorities and the mass media focus on biological and physical repercussions of the outbreak. The mental health burden is not addressed enough.

Hence, in this issue we have attempted to address this latter burden and the authors of the various articles have worked hard to provide knowledge, attitudes and to some extent the problem solving skills that we need to sharpen ourselves. We in the SFP Editorial Board are very appreciative and grateful for the work put into this issue of COVID-19 by every author. Thanks are also due to the College secretariat staff in processing this edition of the Journal.

Teaching our patients

Family Physicians also take the lead in educating their staff on COVID-19 and the rationale behind hygiene measures. Dr Ng Lee Beng, a Senior Family Physician in the Singapore General Hospital (SGH) 'took upon myself initially to teach the elderly healthcare attendants, porters and security guards'. Her work is recognised and she is presently contributing in the domain of Education in the Safe Management Council of SGH. She has recompiled a set of educational slides titled 'Staying Safe after Circuit Breaker- Dancing with COVID-19' which can be used to teach staff and patients in infection prevention. There are also an accompanying speaker's notes. This set of slides and the accompanying speakers' notes can be download at the College of Family Physicians Singapore website [<http://www.cfps.org.sg/publications/the-singapore-family-physician/issue/188>]

THE RESILIENCE WEBINARS CHRONICLES APRIL TO MAY OF 2020

A/Prof Cheong Pak Yean & A/Prof Goh Lee Gan

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The College's SARS responses of 2003 were chronicled in pages of the College Mirror.¹ Of note was a SARS webcast staged in a Starhub studio on May 24 that year with A/Profs Goh Lee Gan, Cheong Pak Yean & Lee Kheng Hock representing the College and with Drs Leo Yee Sin, Lily Neo, Tan Cheng Bock and then Director of Medical Services, Prof Tan Chorh Chuan in the panel. Doctors were able to view the whole panel in the studio discussing the challenges of the SARS outbreak real-time from their computers.

Seventeen years on, when the Covid-19 pandemic loomed, A/Prof Goh, A/Prof Cheong and others successfully shifted in February 2020 post-graduate FM education on-line as documented in a paper in this issue, 'Achieving Educational Continuity under COVID-19 -Early experience and lessons to share'. With the experience gained, they quickly garnered a group including Dr Julian Lim, Dr Tan Yew Seng, Asst Prof Tan Tze Lee and A/Prof Thirumoorthy to put together in March 2020, a series of four webinars to build resilience in frontline doctors. As the circuit-breaker had been imposed, the speakers each broadcast from their home using Zoom. An average of about 400 doctors participated in the 1.5 hour webinar staged on four Sundays at 9 pm.

We chronicle here the 'Resilience Seminars' with commentaries and papers in this edition of the Singapore Family Physicians, links to the full audio-visual recordings of the four webinars. Polls were also conducted to take the pulse of the doctors. The results would be published in later papers. The drawings from the book 'Being Human: Stories from Family Medicine'² used to underline each of the four themes are reproduced in Figure 1.

Communication technology has made quantum leaps since SARS. However, our defence in the absence of effective vaccine and treatment against novel viruses on the rampage is still the same, primordial. We hope that this more complete chronicle of our experience would help buttress human resilience against outbreaks such as Covid-19 in future.

Webinar 1: Identifying the enemies and our friends.

Sunday, 12th April 2020

<https://vimeo.com/413449460/9efd541079>

and written up in Unit 1 & 2 of this publication.

A/Prof Thirumoorthy addressed professional resilience by drawing attention to the Charter of Medical Professionalism³ (2003). He dwelled on the principles of primary of patient welfare, of patient autonomy and social justice and how these relate to the occupational risks of the physician in a pandemic. He also reminded the doctors of a forgotten issue in medical professionalism of promoting clinician's health and wellbeing.

Dr Tan Yew Seng spoke on identifying the 'Enemies' and our 'Friends'. He identified isolation, fear and uncertainty as the enemies which he elaborated in Webinar 3 and 4. The 'friends'

he believed are faith, diligence, courage & compassion and being part of the community, he addressed in Webinar 2.

Webinar 2: Keeping the distance-Between being safe and being lonely

Sunday, 19th April 2020

<https://vimeo.com/415144895/6cca91d259>

and written up in Unit 2, 4 & 5.

It is evident that distancing is the strategy to deal with the outbreak. How can we negotiate between social distancing and isolation? How can a GP work under circumstances of an outbreak without feeling being socially and emotionally isolated?

In a message to the participants, Dr Lee Suan Yew, past president of College and the Singapore Medical Council (SMC), urged doctors 'to serve our patients to the best of our ability even at this difficult time. Have faith as we shall overcome the pandemic. He alluded to the victory over SARS which he declared on November 2003 in 'In Touch', the SMC newsletter.

Dr Wong Chiang Yin spoke on the importance of social distancing and explained the various epidemiological principles used in measures to contain Covid-19. Dr Grace Chiang dealt on the morbidity of isolation and loneliness.

Dr Tan Yew Seng highlighted how the outbreak shows our inherent interdependence, which compels the need for a bigger picture or narrative that involves the community. The specific value of community to doctors include being a repository of knowledge and experience; a sounding board; a safe space to express and share; and a social structure that provides a sense of belonging and solidarity, countering loneliness.

Webinar 3: The fear of contagion – Managing anxious moments.

Sunday, 26th April 2020

<https://vimeo.com/413474379/47b1cb45f2>

and written up in Unit 2 & 6

Fear exists as a basis for many of the personal and social behaviours during the outbreak. It is also not abnormal that GPs may fear for themselves and their loved ones. This session explored what this fear may be about, and how we may attend to fears such that we may continue to care for others.

Prof Kua Ee Heok discussed the co-contagion of fear in conversation with A/Prof Goh Lee Gan. Dr Tan Yew Seng spoke on the physiology of the fear reaction and how by turning towards fear, we may attend to fear instead of fearing it. He offered a simple strategy to address fear as it arises using the sequence: recognise, allow, investigate and nurture.

Webinar 4: Living with the uncertainty

Sunday, 3rd May 2020

<https://vimeo.com/418412959/91c50c7e9e>

and written up in Unit 1, 2 and 3

The final webinar commenced with an address by A/Prof Kenneth Mak, Director of Medical Services Singapore, appreciating family physicians in the war against Covid-19.

Prof Thirumorthy revisited the professional principles to deal with uncertainties viz. Acknowledge the fear of Covid-19 as real; Use scientific evidenced based Personal Protection Equipment (PPE); appropriate professional behaviour to reduce risk of contagion; Balance the patient beneficence with risks to attending healthcare professionals; and Protocol when the healthcare professional is infected. He proposes that we go back to our core medical philosophy in professional ethics and medical law when there is a paucity of medical evidence and protocols.

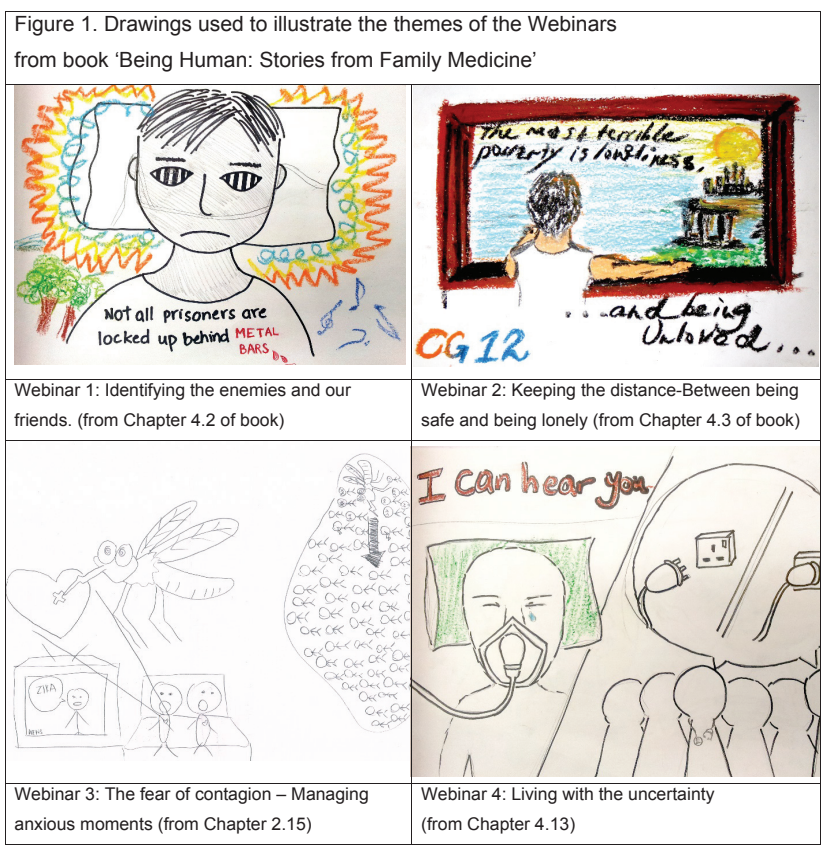
Dr Tan Yew Seng shared his reflections on uncertainty and how it is more often a dread for specific outcomes. An approach to uncertainty includes being open to different outcomes, recognising that each outcome may also be a blessing or curse in disguise. As outcomes are very often mixed in complex situations, having the capacity to deal with remainder issues with gratitude and forgiveness are also important parts of the coping strategy.

A round table sharing from frontline doctors in GP clinics, Polyclinics & Community Facilities was chaired by College's President, Asst Prof Tan Tze Lee. Dr Elaine Chua, a heartland family physician spoke of her experience on detecting Covid-19 patients. Dr Wong Tien Hua belaboured the administrative and logistical challenges in managing clinics and Dr Vincent Tok, who was involved in various telegram and chat groups shared the problems and frustration of complying with some of the advisories imposed. Dr Julian Lim surprised the webinar by reciting an accomplished poem of his experience titled 'Is That What You Are Really Worried About?' (Unit 3)

The final seminar on 3rd May 2020 was extended to 2 ¼ hours as three hundred doctors still logged on were engaged in fervent conversation of how Covid-19 affected our practice and personal lives. The chairman of the webinars, A/Prof Cheong Pak Yean reluctantly closed the series at 11.15 pm after thanking all the participants for their enthusiastic and positive contributions.

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2. Cheong Pak Yean, Ong Chooi Peng. Being Human: Stories from Family Medicine. Singapore: College of Family Physicians Singapore. 2019. 168 p.
3. Blank L, Kimball H, McDonald W, et al. Medical professionalism in the new millennium: a physician charter 15 months later. Ann Intern Med. 2003;138(10):839-841. doi:10.7326/0003-4819-138-10-200305200-00012



TIMELINE OF COVID-19 RELATED EVENTS IN SINGAPORE, JANUARY TO JUNE 2020

A/Prof Goh Lee Gan

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Sources of information:

- [1] CNA
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- [3] Toh WL. Months before phase 3 can begin: Lawrence Wong. The Straits Times [internet]. 2020 Jun 16 [cited 2020 Jul 1]. Available from: <https://www.straitstimes.com/singapore/months-before-phase-3-can-begin-wong>

- [4] Ng C. Friday prayers in mosques to resume from June 26 with online booking system, limited to 50 people a session. The Straits Times [internet]. 2020 Jun 21 [cited 2020 Jul 1]. Available from: <https://www.straitstimes.com/singapore/friday-prayers-to-resume-from-june-26-with-online-booking-system-limited-to-50-people-a>

DATE	Events	Source
January 23	First confirmed case in Singapore 66-year-old Chinese national from Wuhan	1
February 04	First cluster of four human-to-human transmission linked to Yong Thai Hung Medical Hall	1
February 08	Prime Minister Lee Hsien Loong's first address to the Nation	1
February 17	A new stay-home notice announced – A person on a stay-home notice (SHN) cannot leave their residence for 14 days	1
February 29	There are more than 100 COVID-19 cases in Singapore	1
March 12	PM Lee's second address to the Nation	1
March 12	Safe distancing measures are announced	1
March 17	Students overseas are advised to come home to Singapore, as countries around the world would go on lock down.	1
March 21	Singapore announces first two COVID-19 deaths – 75-year-old woman and 64-year-old man.	1, 2
March 24	All religious gatherings must be cancelled. Tuition centres are to close.	1
March 30	Several new clusters are announced, including one at S11 dormitory in Punggol.	1
March 31	There are now 926 COVID-19 cases in Singapore, and another cluster in a dormitory is discovered.	1
April 03	PM Lee announced the beginning of a circuit breaker that was to last from April 7 to May 4. Most workplaces were to be closed, except for those providing essential services, and schools moved to full home-based learning. There was a shift in the Government's mask policy, with people no longer discouraged from wearing masks. Reusable masks would also be distributed to all households.	1
April 07	Circuit breaker begins. A new Bill prohibiting social gatherings both in private and public spaces was passed in Parliament.	1
April 14	Wearing of masks made compulsory – anyone stepping out of the house would have to wear a mask, or face being fined, with egregious cases to be dealt with by the courts.	1
April 17	Singapore reports 623 new COVID-19 cases, taking the total number of cases past 5,000.	1
April 20	Parents not allowed to drop children off daily at grandparents' place, open-air stadiums to close.	1

April 21	Circuit breaker extended till June 1, restrictions further tightened	1
May 05	Some circuit breaker restrictions lifted – traditional medicine (TCM) providers, with practitioners allowed to administer acupuncture treatments for pain management. Hairdressers and barber shops were also allowed to provide basic services. The opening of home-based food businesses, selected food retail outlets and food manufacturing firms would follow a week later.	1
May 19	Singapore announced that it would exit the circuit breaker on June 1, with measures to be progressively lifted in three phases.	1
June 01	<p>Circuit breaker ends. Businesses allowed to resume operations from June 2 include manufacturing firms. Hairdressers and barbers will also be allowed to offer all services, beyond just basic haircuts.</p> <p>The lifting of the circuit breaker also means the resumption of motor vehicle servicing, aircon services, printing services, basic pet services, and the reopening of school bookshops and retail shops selling school uniforms.</p> <p>Visits to parents or grandparents will also be allowed, limited to one visit per day and not more than two persons who must be from the same visiting household. Marriage solemnization, funerals and wakes can resume with up to ten persons in attendance.</p> <p>Places of worship can also reopen for private worship. This will be limited to a maximum of five members from the same household praying together at any one time.</p> <p>Preschools will gradually reopen from June 2. In Phase One, students from graduating cohorts in the primary and secondary levels will be allowed to return to school on weekdays, while other cohorts will rotate weekly, alternating between home-based learning and returning to school for lessons. People still need to wear masks, and go out only when necessary.</p>	1
June 19	<p>Phase Two – This will involve the gradual reopening of more firms and services with safe management measures in place.</p> <p>These include food and beverage dine-in and retail outlets, gyms and fitness studios, and tuition and enrichment centres. Sports recreation and outdoor facilities will also start to reopen, subject to safe management practices for both facility staff and users being in place. Muslims will be able to return to most mosques on June 26 for congregational prayers, which will be limited to 50 people per session.</p> <p>Phase Three - National Development Minister Lawrence Wong announced that it could take months before Singapore reaches the third and final stage - depending on the infection status. By this phase, social, cultural, religious and business gatherings or events would have resumed, although gathering sizes would still have to be limited in order to prevent large clusters from arising. Seniors, who are more likely to develop severe complications from COVID-19 would have been able to resume day-to-day activities which practicing safe distancing measures.</p>	1,3,4
June 30	Total number of cases reported to date in Singapore is 43,907.	2