

Coronavirus: Front-line Fighters

# All hands on deck at public hospitals

A doctor tells of seeing her young daughters for only half an hour each day, while others share the challenges and fears they face in the fight against the coronavirus



Joyce Teo

At the heart of the outbreak battle, the National Centre for Infectious Diseases (NCID), where most coronavirus patients have been taken, senior consultant Monica Chan reflects on what it has meant to her family.

Since late last month, as the number of suspected and confirmed coronavirus cases grew, Dr Chan has managed to see her two daughters, aged nine and 11, for only about half

an hour each day before they sleep. When she is unable to do so, she stays in touch through a video call.

A check of Singapore's public hospitals shows the challenges and fears faced by healthcare staff in the line of duty, who put in extra work hours as days turn into weeks and possibly into months.

Of Singapore's scores of cases, several are in critical condition, and for every confirmed case, there are more suspected ones.

Patients started checking in to the 330-bed NCID at the start of the year. Some sought help at hospitals including Changi General Hospital (CGH), National University Hospital (NUH) and Sengkang General Hospital.

Singapore's first confirmed case, a Chinese tourist from Wuhan, went to Singapore General Hospital on his own as that was the nearest one from his hotel in Sentosa.

NCID's first confirmed case, and Singapore's second, was announced on Jan 24. The patient had sought help at a hospital and was subsequently transferred to the centre.

While all major hospitals in Singapore have isolation rooms for patients with suspected infectious diseases, NCID, which opened last year, was built specifically to combat outbreaks such as the current coronavirus outbreak.

It has the largest number of special isolation rooms among Singapore's healthcare facilities, and also houses the National Public Health Laboratory, where swabs are sent to check if a patient has the coronavirus infection.

As patient numbers rise, NCID has deployed more medical teams on the ground. Dr Chan says doctors from neighbouring Tan Tock Seng Hospital (TTS) have been roped in to help out, leave has been frozen and most training has been cancelled.

Over the past week, regular patients at NCID have been transferred to TTS as the centre prepares to handle more coronavirus patients, if needed.

Each day now, a team of two or three doctors may see 10 to 20 patients who have or are suspected of having the coronavirus disease, up from five to 10 patients normally before the outbreak, says Dr Chan. They must wear personal protective equipment (PPE) each time



Dr Monica Chan says it was "anxiety-provoking" when the National Centre for Infectious Diseases confirmed its first coronavirus case. ST PHOTO: JASON QUAH

they go into an isolation room to see a patient. That was not always the case previously.

Dr Chan says it can take five to 10 minutes to put on the gear, which includes an N95 mask, a visor, a gown and gloves, and another five to 10 minutes to remove it very carefully. "We minimise unnecessary entry

into a patient's room, and so it's probably twice a day," she says.

Before the coronavirus reached Singapore, NCID had done a lot of outbreak planning and training, and conducted drills, she says. She adds that despite the preparations, when the first patient at NCID tested positive in a preliminary

test on the evening of Jan 23, it was "anxiety-provoking". It was about 5pm when the medical team received the results and they had to go back to the ward to announce the news.

In the wards, they monitor each patient closely, as a patient's condition can worsen at the end of the

first week, when shortness of breath can progress quite rapidly, Dr Chan says.

"I'm never sure what the day will bring because you don't know where the next new patient will be from, and whether there will be an increase in the number of patients coming in," she says.

Direct confirmatory testing for the virus by the laboratory at NCID became available from the second week of January, which helped to cut down the time that doctors took to diagnose a patient.

This reduced the uncertainty and waiting to see if symptoms worsen," says Dr Chan.

"As symptoms of the coronavirus are similar to the common cold and flu, the direct confirmatory testing allowed NCID to quickly sift out those who did not have the virus."

Dr Kelvin Kuan, a consultant at CGH's accident and emergency department, says any initial fear among medical staff diminished as

Stories from the front line. SCAN TO WATCH. QR code and ST logo.

the hospital infection control put them through a refresher course on using PPE, "which was uncomfortable but something we could trust in providing us with protection from the virus".

One of the challenges was getting patients' travel history. "While being led to the isolation room, some patients expressed regret at revealing their travel history," he says.

Then, as the travel ban took effect and cases of local spread were reported, the medical team knew that they had to be even more vigilant.

"Now anyone can be a patient," Dr Kuan says. "Despite that, we had already planned ahead with this scenario in mind, and the A&E was split into different sections to prevent the mingling of those at a higher risk of the virus with those at a lower risk."

Dr Tan Seow Yen, a consultant at

CGH's infectious diseases department, admits: "When treating an infected patient, I did worry about potentially infecting my family. But I kept telling myself that the PPE would protect me adequately."

Dr Ian Mathews, a consultant at NUH's emergency department, says: "New work flows that we have implemented for affected patients will change frequently the more we discover about the disease."

Staff who see patients with fever and respiratory illness on the front line and in high-risk areas put on PPE for the majority of their shift, which ranges from eight to 12 hours, he says.

In some cases, they have to wear the full PPE for a prolonged period. "We are drenched (in sweat) after minutes of use."

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Ministry of Health director of medical services Kenneth Mak speaking to the media on Friday. Associate Professor Mak, a surgeon by training, took up the post only at the start of this month. ST PHOTO: DESMOND FOO

## Top medical official's long hours in hot seat, barely a month in job



Salma Khalik, Senior Health Correspondent

Talk about landing in the hot seat. Singapore's top medical authority, the director of medical services (DMS) at the Ministry of Health, is Associate Professor Kenneth Mak. And he took up the post only at the start of this month.

Prof Mak, 53, now finds himself dealing with the biggest national medical emergency since SARS: the coronavirus outbreak.

"We work every day. Even Chinese New Year was an ordinary working day for most of us," says Prof Mak, who even in the fortnight before formally taking up his position was leading the medical effort. He was previously chairman of the medical board at Khoo Teck Puat Hospital (KTPH).

Vested in him is the full authority from the Infectious Diseases Act which allows him to quarantine people or get personal data that will help in controlling an outbreak. During the severe acute respiratory syndrome (Sars) outbreak in 2003, the then DMS Tan Chorh Chuan closed one of Singapore's busiest hospitals, Tan Tock Seng, to all but Sars patients.

The DMS is the person to whom other doctors, such as Professor Leo Yee Sin who heads the National Centre for Infectious Diseases, report to.

In turn, he has to advise the country's political leaders on the situation and steps that need to be taken to keep people here safe.

Of the past month of intensive work, Prof Mak says: "The most challenging part of the work is to understand the behaviour of this virus, how it infects people and how it spreads from one person to another."

Prof Mak is a surgeon by training, so infectious diseases are not his forte. He says: "I'm grateful for having many experts in different areas who have been very willing to share their knowledge and this has been most helpful."

But in his previous position at KTPH, he learnt to see the big pic-

ture. And with 30 years as a doctor behind him, he says: "The work pressure is something that I've learnt to handle through the years."

Of the long hours, the many meetings and the almost daily press briefings, he says: "I've learnt to rest whenever I can, in order to have enough energy to deal with the many different issues."

His wife and three daughters are understanding about the time he has been spending on this outbreak. He says: "I regret having to spend so much time away from home. These days, I return home sometimes well past 9pm and they'd have to wait for dinner without me."

What is most worrying, he says, is the little knowledge there is of the virus. "But we are beginning to understand better how the virus spreads and how the infection manifests."

And the most rewarding experiences: "The opportunities to reach out to people who are on the front lines, in both the hospitals and clinics, to appreciate how driven and committed they are to providing the best care they can provide for their patients."

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NCID executive director Leo Yee Sin with flowers for her staff from the public. With her are (from left) director of nursing Margaret Soon and nurses Ma. Olivia Valencia Valiente and Nurul Hazirah Subari. ST PHOTO: JASON QUAH

## 'Taking care of everybody' at centre for infectious diseases

She is right on the front lines in the coronavirus fight, as executive director of the National Centre for Infectious Diseases (NCID) - where the bulk of patients are cared for in specially constructed isolation rooms.

This is the sort of pressure Professor Leo Yee Sin, 60, faces: There are at least twice as many patients in the wards than normal, with close to 60 from the current outbreak, and more expected.

She has "to take care of everybody", as she puts it, making sure the infrastructure - only a year old - is able to stand up to the sudden heavy load.

The 330-bed NCID building also houses the National Public Health Laboratory which tests samples from suspect patients for the coronavirus - and from where the confirmation of their illness comes.

Prof Leo now also supports the Ministry of Health as he reports directly to its director of medical services.

Then, there is the pressure of the ever-changing nature of the

virus itself. She says: "This outbreak is very challenging. It is not mild and we haven't seen the end yet. The situation is still evolving."

Generally, those who get very sick take a turn for the worse after five to seven days of illness. A handful of patients with severe conditions have done well and no longer need intensive care. But she is very worried for one "who has been unable to get himself out of intensive care and still requires mechanical ventilation".

She adds: "I do anticipate that one of these days, we will have a fatal case. What we want to do is to minimise the number (of fatalities) as much as we possibly can."

Her role today is far bigger than during the severe acute respiratory syndrome (Sars) outbreak in 2003. Then, she had just a clinical role caring for patients and advising policymakers on the medical situation.

Compared with Sars, the cases this time are escalating much faster. Because of the quick increase in coronavirus patients and the need to screen many more patients for the disease, she needed to bring in staff from Tan Tock Seng Hospital next door, since even the numbers of buffer staff were not enough.

Salma Khalik

Says Prof Leo: "We have to come out of our norm, to handle something that is very different. We have adapted a workflow to make sure that we can function, and function safely."

But she adds that many of the doctors and nurses are "old troop" who have handled other outbreaks, like Sars, the Nipah virus and Zika, so their experience is proving very useful.

Still, she says that 24 hours a day is just not enough: "I need at least 28, even 36 hours a day."

What has to give is her sleep and personal life, but that is part of her job and her husband is very understanding, she says, knowing that at times like this, "family becomes secondary". Her three children are grown up.

"The virus doesn't take time off, no weekends or holidays. It is running very fast, so we need to be faster, to be ahead of the curve."

As with Sars, people have been very supportive, she says, offering her staff at NCID free food, drinks, snacks and flowers.

She is also grateful to the 2,000 Grab drivers who have stepped forward with offers to ferry staff to and from the hospital.



Dr Vernon Lee finds it most rewarding at this time when his friend's contact tracing prevents further spread of the coronavirus. He adds that encouraging messages from friends also give him strength. ST PHOTO: JASON QUAH

## MOH team races against time to trace links and stop spread

The highs and lows in life today for Dr Vernon Lee, 42, are tied closely to whether his team is able to find the source of coronavirus infection in patients who caught the disease locally.

As he is the director of communicable diseases at the Ministry of Health (MOH), it is his team that has to identify - and serve quarantine notices to - all close contacts of someone who is infected. They aim to do all this within 24 hours, to minimise spread of the virus.

The first cases were all visitors from Wuhan whose contacts were fairly limited. Although the visitors went sightseeing, they would only have had brief contact with people here, and so had little danger of spreading the virus to them.

The difficulty came when local cases with no known sources emerged.

Dr Lee says: "The most challenging part is to incorporate the many streams of information coming from various sources, and to piece together the picture

of how the Covid-19 cases could have been infected."

It can be frustrating when faced with new cases for which it is difficult to find links.

But his team managed to trace some - they discovered that three people here had most likely contracted the infection at the Life Church and Missions, which a couple from Wuhan had attended. The China couple were confirmed to have the coronavirus infection.

"The most rewarding is when we are able to find a link, and when our contact tracing and containment measures are able to prevent further spread from the particular case," says Dr Lee.

That, and encouraging messages from friends and even mere acquaintances "has warmed my heart and gives me strength to carry on the fight", he said.

He had been all set to go on a

holiday to Bangkok with his family over the Chinese New Year long weekend when Singapore reported its first coronavirus case, a visitor from Wuhan.

He recalls: "My family was very understanding. I told them to carry on with their trip, as my work shouldn't affect their plans. But I had to miss the reunion dinner and precious time with my family."

Dr Lee has been involved in epidemiological investigations for the severe acute respiratory syndrome (Sars), as well as bird flu in Indonesia when he was seconded by the MOH to the World Health Organisation to help with the outbreak there.

He has also worked on the swine flu and Zika outbreaks. "A lot of the investigation work requires experience to have a feel of where and what to investigate to maximise success," he says.

But he says his work is made more difficult by rumours and misinformation spread on social media: "That undermines the real information that we are putting out. Addressing this misinformation takes time and draws us away from the important work."

Salma Khalik



Dr Dale Lim checking a child patient with suspected flu symptoms at his clinic on Thursday. Besides assuring his patients, he has also assured his family that protection measures are in place. ST PHOTO: KUA CHEE SIONG

## Doc treats, comforts patients in open-air 'consultation room'

The open-air corridor underneath a block of Housing Board flats in Whampoa would not normally be put to use as a doctor's consultation room.

But these are not ordinary circumstances, as evidenced by the N95 mask imprints left on the face of 47-year-old family physician Dr Dale Lim, after he removes it to talk to Insight.

The mask and outdoor consultation area, where he sees patients with flu-like symptoms, are just two of the many measures in place following the spread of the coronavirus here.

He has also equipped all his staff with masks, and has his clinic disinfected frequently.

Patients wait in the well-ventilated corridor of the HDB block, sitting 2m apart from each other, and must declare their symptoms, travel and contact history and have their temperature taken before being admitted.

Those deemed potential carriers of the virus are sent separately from other patients, who consult the doctor inside the clinic.

But Dr Lim, who has been a doctor for over 20 years, is not doing all this out of fear of the virus.

"It's for patients' benefit. I want them to be confident, knowing that when they come for their healthcare needs they won't get infected by another virus," he tells Insight.

It is not just patients he has to reassure. His wife and nine-year-old son are concerned for his safety - and theirs - so he constantly reminds them that the protection measures put in place are sufficient.

He also takes precautions such as changing out of his scrubs before leaving the clinic, and washing them separately from the family laundry.

While reassuring everyone else, he keeps himself calm by staying informed about the virus and ensuring he has proper measures in place.

Dr Lim has had to work extra hours daily to ensure the additional safety measures are in place, and to read up on the virus after work.

He has been unable to attend church for the past two weeks as he is too busy, and had to distance himself from his friends.

But he is keeping his cool: "It's during times like this, when help is needed more, that doctors should step up."

"We're called to duty."

Timothy Goh

Information about the new coronavirus is being released at a much quicker rate than information about Sars was at the time, which helps him keep calm, he adds.

"Sars made me more prepared because we learnt how viruses can spread."

"Having used (protective equipment) during that time, I'm confident that it will work."

Any apprehension that he may have about falling ill during this period stems from concerns that it might impede his ability to care for others.

"I don't want to fall sick because I want to continue helping patients," he says.

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Timothy Goh

# GPs set aside their own fears to fight on the front line



Timothy Goh

With almost 30 years of medical experience, Dr Leong Choon Kit has seen it all: Sars, Zika and H1N1. So when the coronavirus hit Singapore's shores, he knew what he had to do. "I told my family that if I see a suspect case, that day, I'll

make sure I don't come into contact with them. They must be mentally prepared," he said.

The 52-year-old family physician at Mission Medical Clinic is just one of many doctors who are Singapore's first line of defence against the virus. His years of experience allow him to take a cool-headed approach to the outbreak.

He said: "I'm not scared. We've all gone through quite a few of these outbreaks. We're not complacent, but it gives us some confidence."

"Of course I worry (about infecting my family). But worrying doesn't change a thing. We take our

own precautions."

For Dr Leong, these precautions include showering once he reaches home, and washing his clothes separately from his family's. "This is reality - we want to be doctors because we want to help people, and we know there's a chance we might get infected and succumb to it."

However, he acknowledged that the fight can sometimes feel like a lonely one for private practitioners. The head of a primary care network, Dr Leong said he has seen younger doctors venting their frustration about the situation.

"As a solo practitioner, you're

very much alone. Sometimes they may feel very depressed or defeated, because it feels like they're fighting the war alone," he said.

Dr Leong said he sometimes texts junior doctors or talks to them privately to try to reassure them.

The Singapore Medical Association (SMA) and the College of Family Physicians Singapore (CFPS) have stepped up to help as well.

"Private practice GPs (general practitioners) are especially vulnerable, as many of them run solo or small practices, with limited resources," said the SMA's first vice-president, Dr Tan Yia Swam.

Both SMA and CFPS supported front-line doctors through the initial days of mask shortage by obtaining their own supply of masks, which they then sold to the doctors.

Now, Dr Tan said that among other efforts, SMA is linking up food delivery services with major hospitals, and setting up a website where doctors can get relevant information on the virus. SMA's council members are also supporting GPs through informal chat groups.

Meanwhile, CFPS' members include a hotline that doctors can call to ask questions about practising medicine during this time. It is also

keeping doctors updated with regular circulars about the virus.

Dr Wong Tien Hua, CFPS' vice-president, said: "The current situation is highly stressful and uncertain. Aside from logistical issues, there are also personal fears, worries about staff getting infected. So we try to address these."

The Government said last week that it will distribute one million face masks to private clinics, including GPs and specialists.

Some doctors, like Dr Tan Liat Leng, 38, are also facing a heavier workload. "Last week, I was working virtually every day from morn-

ing till night," said the GP at EH Medical Clinic.

He has seen a 30 per cent to 40 per cent increase in patient load, as many are presenting themselves at the earliest sign of a cough or runny nose.

This is exacerbated by a lack of locums, many of whom are concerned for their own safety and that of their families, or have to stick to one healthcare institution to reduce the risk of spreading the infection, said Dr Tan.

More time is also needed to reassure patients who are concerned about the virus. But Dr Tan sees this

as part of his duty as a doctor.

"We have to treat not just the disease but the disease as well. As a doctor, there's a responsibility beyond just trying to cure," he said.

Dr Tan, who was a doctor during the H1N1 outbreak but not the Sars one, said he too is worried about the situation, but puts aside his own discomfort to reassure his patients.

"We're all human beings and suffering through this together, and I believe an empathetic word is important. As doctors, we know that our words carry a certain weight with patients, so we need to help address their concerns," he said.

Unlike Dr Tan and Dr Leong, Dr Raymond Ong, 33, was too young to be a fully fledged doctor during either Sars or H1N1. But this does not stop the GP at Intemedical 24 Hour Clinic from setting aside his worries and putting in extra hours to fight the virus.

Dr Ong has seen a 20 per cent to 30 per cent increase in patients at the clinic since the outbreak, as well as twice the usual number of patients using teleconsultation.

He now works seven days a week to keep up with the higher numbers. But he continues encouraging his patients to use telemedicine in-

stead of going to the clinic, even though it means a heavier workload for him, as this helps reduce the risk of him infecting other patients.

And though he does worry that he might fall sick, it is because he is concerned about his patients' peace of mind. "If the front-line people are down, that'll severely impact the confidence of Singaporeans," he said.

"It'siring, but it's a duty, and someone's got to do it. If a fire breaks out, the fireman will get tired, but that's his duty, no matter how tired you are, you will do it."

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