
Ward 52B ICA/General Ward

PROLOGUE

ON FRIDAYS, the Infectious Diseases (ID) community in Singapore gathers to present clinical challenges to one another. That Friday in March 2003, we heard the Tan Tock Seng Hospital (TTSH) ID team describe a pair of fellow travellers who were down with pneumonia of unknown aetiology. Most ominously, healthcare staff who had looked after them had fallen ill.

We were all novices then. The toll that novel pathogens could take on people, hospitals and societies was not something we understood. We were filled with a vague sense of unease, but we did not know what we were uneasy about.

One week later, an ID doctor developed fever while on his way back to Singapore from a course in New York. Television footage showed how, upon landing in Frankfurt, he was transported by men in full protective gear to an isolation hospital. The Germans did not miss the opportunity to show off their virological prowess – within days, they had identified, via electron microscopy, the culprit virus responsible for the pneumonia spreading in the wards in Singapore, Hong Kong and parts of China.

Meanwhile, at the Singapore General Hospital (SGH), a man who had recently been treated at TTSH was admitted for gastrointestinal bleeding and fever. Due to his recent admission to TTSH, isolation

was considered, but he was deemed too ill to be in a single room. Ignorance of the wiles of the coronavirus was bliss.

The word “super-spreader” was soon to be coined. Eleven SGH nurses reported sick – all from the ward where the ex-TTSH patient had resided. As suspicion once more zeroed in on him, his chest X-rays were reviewed by several senior doctors, and all confirmed the absence of pneumonia. Still, the fact had to be faced that contagion had set in. At an evening meeting that stretched into the night, the decision was made to amputate the entire ward of doctors, nurses and patients, and implant it in TTSH – a massive operation called humiliation.

A punishing series of bad news followed. Staff fell ill, and a few perished. Contact tracing linked one, and then another, of Singapore’s rising numbers to the SGH super-spreader. At press conferences, pressmen, armed with the wisdom of hindsight, grilled SGH’s leaders mercilessly. The hospital floundered on, with staff struggling with new and strict infection control rules, while feeling helpless in a sea of adverse publicity.

Of all the lessons SARS taught us, one would become a guiding principle – never again.

CHAPTER 1

Forward Into Battle

"Hi Doctor, there is a patient for admission."

As a medical officer (MO) on night float, we probably hear this at least 15 times a night. Little did I know that this was going to be my first contact with a patient harbouring the novel virus.

When I walked in to see the patient, he was coughing vigorously. I reviewed the epidemiological history and found out that he was from Wuhan.

"Did you go to the seafood market?" I asked instinctively, as the infamous seafood market was already synonymous with the virus. He denied sheepishly initially, but continued shortly after I probed a second time, "Actually, I visited the market with my son about three weeks ago."

The silence that ensued was deafening: between the patient and myself, I suppose, we both had a gut feeling of what that meant.

There was plenty to do after that. Taking his swabs, keying in my findings, calling the Infectious Diseases (ID) consultant on-call, and notifying the Ministry of Health (MOH), all of which had to be done within one hour of his admission.

The patient's son[1] was outside, gesticulating frantically and coughing – without a mask! He was eager to find out when the swab result would be ready. I handed him a mask and recalled asking, or probably berating, him to go to the Emergency Department (ED). It was adrenaline that kept me going through the rest of the shift.

At the back of my mind, the uncertainty of the whole situation remained perturbing.

The next day, at about 9:00pm, while I was again busy in ward 68[2], my phone buzzed incessantly. After I de-gowned, I saw many messages of support, with some directing me to check my email. It felt almost surreal the moment I read the memo that the patient I had seen yesterday tested positive for the Wuhan virus. From that point on, there was no letting up. After my week of night float, the whole of ward 68 was full; uncertainty became the new normal.

SAMUEL KOH
Resident, Internal Medicine

[1] The patient's son also tested positive for the virus, and became SGH's second patient with the novel infection.

[2] For more details of how Ward 68 was set up as SGH's state-of-the-art Isolation Ward, see Chapter 2.

TIMELINE OF OUTBREAK

30 DECEMBER 2019
Cases of pneumonia of unknown aetiology in Wuhan reported by World Health Organisation (WHO) China Country Office.

3 JANUARY 2020
A total of 44 patients with pneumonia of unknown aetiology reported to WHO by the Chinese authorities.

9 JANUARY 2020
WHO reported that Chinese authorities had made a preliminary identification of a novel coronavirus in a patient with pneumonia in Wuhan.

13 JANUARY 2020
First confirmation outside China of a case of the novel coronavirus infection – in a woman who had travelled from Wuhan to Thailand.

23 JANUARY 2020
China reported cases surfacing in 25 provinces, with a quarter of the 571[3] confirmed cases classified as being seriously ill. Globally, there were 10 other confirmed cases, bringing the total to 581.

24 JANUARY 2020
A publication[4] in The New England Journal of Medicine from Chinese researchers, who first identified the virus, called it "2019 nCoV".

30 JANUARY 2020
WHO declared the novel coronavirus outbreak a "Public Health Emergency of International Concern".

11 FEBRUARY 2020
WHO announced the official name of the new coronavirus disease – COVID-19.

11 FEBRUARY 2020
A pre-print publication by the International Committee on Taxonomy of Viruses named the novel coronavirus "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2) due to its genetic similarity to the coronavirus responsible for the SARS outbreak in 2003.

---

[3] World Health Organisation. Novel Coronavirus (2019-nCoV) Situation Report - 3. 23 January 2020 [pdf]. Available at: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200123-sitrep-3-2019-ncov.pdf?sfvrsn=d6d23643_8.

[4] Zhu N et al. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med 2020;382:727.

New year, new battle

On 23 January 2020, the government of China imposed an unprecedented lockdown in Wuhan, a city of 11 million people. Its aim was to stop the spread of a mysterious novel coronavirus. Thousands flocked to leave the city as people rushed to be with their families for the Lunar New Year. But the virus had already escaped, as cases had been diagnosed outside China even before Wuhan was locked down.

On the very same day, Singapore confirmed its first case of infection with the novel coronavirus.

Race against time

With the confirmation of the first case, Singapore General Hospital (SGH) went on a war footing. The Emergency Department (ED) immediately became a battleground.

The Department of Emergency Medicine was swamped with both COVID-19 patients and other patients.

FACING THE VIRUS

I will not forget the day when we heard of the virus that came from Wuhan. We were told to get ready and start pre-screening measures and prepare our isolation facility. At first, we thought that this was going to be similar to MERS-CoV[5], where we screened and moved suspects into our fever zone[6].

Going to my first Command Centre[7] meeting for the Wuhan virus, my initial feelings were a mix of excitement and pride, because we were finally going to show the world what our Emergency Department (ED) was all about. I was going to be the Head of Department during this pandemic and the ED would do very well.

Everything changed on the day we detected the first case in Singapore – it dawned on me that this was very different. The first few days were some of the most challenging ones of my young headship. We were flooded with a lot of tourists who came to see us. Usually, we would have 10 to 15 patients a day in our fever zone. After the first case, the situation exploded. Every day, there would be 50 to 60 patients – tourists or returning Singaporeans – with features worrying for the novel infection. We really couldn't cope, be it in terms of space or manpower. We spoke to senior management and they gave us part of the Ambulatory Surgery Centre (ASC)[8], a facility adjacent to ours.

Together with non-suspect cases, we began hitting about 400 cases per day. As the department became crowded and the wait time lengthened, the nurses struggled to separate those with and without worrying clinical features. With long queues, people turned hostile. It didn't help that many of the tourists turned up with luggage in tow.

As I walked the ground and saw our young doctors and nurses go into these fever zones, I could tell that they were so scared. We didn't know what was going on. With SARS, we could identify who had it, based simply on fever, and isolate them straightaway. However, this virus was different – fever was not a consistent sign.

---

[5] Middle East Respiratory Syndrome Coronavirus.

[6] During SARS, the ED did not have a clearly demarcated space where suspect cases could be placed, separated from other patients. In the immediate aftermath of SARS, a fever zone was created within the ED. In the years that followed, it was used to manage the ED attendees suspected or confirmed to have highly contagious diseases like chickenpox and tuberculosis. When the MERS outbreak erupted in the Middle East, anyone suspected to have the disease was also managed in the fever zone while in the ED.

[7] This was SGH's version of a war cabinet. It was led by Dr Tan Thuan Tong (Head and Senior Consultant, Department of Infectious Diseases). Almost all of senior management were in the Command Centre.

[8] For details on the ASC, see chapter 4.

The weight on my shoulders

One incident caused me to break down. The junior doctor who saw the first COVID-19 patient had a very high fever the next day and had to be admitted to the Isolation Ward (IW). I couldn't visit him – that was the rule. My world crashed. I feared, not for myself, but for his life, his family – he was newly married. I called him, and he told me, "I am very scared. I can't see my family. I can't see my wife, I don't know what's going on ..."

I had an overwhelming sense of helplessness because there was nothing I could do. As more junior doctors and nurses were admitted for fever[9], I had sleepless nights, fearing the worst.

A difficult decision was made to go into segregated groups to reduce the chance of cross-infection. Leave was cancelled, and those who usually spent only a portion of their time doing clinical work, such as clinician-scientists[10], all came back to work full-time. Prof Anantha[11], often regarded as the "Father of Emergency Medicine" in Singapore, also threw himself into the fray, working the full 12-hour shift.

> I didn't want any of my guys to die, I wanted them to be safe. There was this dread of losing someone on my watch. If they died, how would I face their family?
>
> Kenneth Tan, Head and Senior Consultant, Department of Emergency Medicine

[9] All staff who had fever or respiratory symptoms were classified as suspects. All suspects were admitted. None of the ED staff tested positive for the virus.

[10] Clinician-Scientists are clinicians who have won salary support from the National Medical Research Council and other funding agencies and therefore devote a large fraction of their time to research.

[11] Prof Venkataraman Anantharaman, Emeritus Consultant, Department of Emergency Medicine.

Young ones to the fore

ID physicians began discussing the novel illness early in January 2020. A sense of foreboding gradually engulfed the department as cases appeared outside China. ID physician Tan Thuan Tong[12] knew that the duty roster would have to be changed. Patients who were either suspected or confirmed to have the new pneumonia would have to occupy the IW, and be looked after by a dedicated team of doctors.

An amended roster was released on 22 January 2020, just a day before the first case was confirmed. Thuan Tong weighed his risk mitigation plans. "I was very worried. There was too much to risk. I took out those with

ID physician Tan Thuan Tong (standing) led the SGH response, conducting Command Centre meetings which eventually went virtual.

[12] Dr Tan Thuan Tong, Head and Senior Consultant, Department of Infectious Diseases.

young children from the manning of the ward. We didn't know much about the virus then. After having been through SARS, I knew that there would be small lapses. I am sorry to say this, but it was intentional that I had very young people sent to the IW. Siew Yee[13], Anson[14], Yvonne[15] and Benjamin[16] were the true heroes. Even though it was a deliberate decision, if something happened to any of them, it was my call." Hearing Thuan Tong's voice cracking towards the end of his sentence at a joint interview, Yvonne tearfully assured him, "It's OK, boss. It's OK. We're happy to help."

Chinese New Year's eve in the isolation ward

ID physician Yvonne Chan was the first specialist to be assigned to run the IW. She started on 24 January 2020, eve of Chinese New Year (CNY).

With a sense of trepidation, Yvonne kicked off the roster. "It was quite intimidating to be the first person to start because there was so much unknown. We just didn't know what the virus was, and suddenly we had our first case in Singapore. There was not much data on how to manage it.

"I started my morning with rounding, and the whole day continued with more rounding and answering phone calls. The calls were non-stop. Questions concerning who should be isolated or what to do when a suspicious case did not meet the criteria were difficult, as there were not enough beds initially. Will keeping a patient in an isolation room affect his care? On the other hand, not putting the patient there might lead to other people being infected. We were dealing with something with implications not just for patients, but also our colleagues, the hospital and the wider community.

[13] Dr Thien Siew Yee, Associate Consultant, Department of Infectious Diseases.
[14] Dr Anson Wong, Consultant, Department of Infectious Diseases.
[15] Dr Yvonne Chan, Associate Consultant, Department of Infectious Diseases.
[16] Dr Benjamin Cherng, Senior Consultant, Department of Infectious Diseases.

"Generally, we took a more cautious stance. But then we had to make sure that patient care was not compromised because of isolation status. We worked quite hard to ensure these things ran smoothly.

"So on CNY eve, by 5:00pm or 6:00pm, we were still in the IW. I was trying to sort out all the logistics, how to risk-stratify patients and where to put everybody. I didn't think I would make it home for the reunion dinner. Somehow, we managed to wrap everything up and I left in time for dinner."

Equipped enough for battle?

Like other doctors at the very frontlines of the epidemic, Yvonne had her fears. Despite all the Personal Protective Equipment (PPE), she knew that a small slip was all it would take to be infected. There were times when, upon coming out of the patient's room, she exclaimed to herself, "Oh gosh! I have definitely contaminated myself this time." She remembered, "When I go back home at the end of the day, no matter how much I wash my hair, I still don't know if I will get it. At the back of my mind, I think of the 'what ifs' – what if I get COVID-19 and die like some young doctor in China, which has happened. But when I am working, I have to cope with the work on hand, look at the patients properly, their needs and issues, and not feel afraid. When I wasn't sick after working at the ward for so long, it became evident to me that the PPE was sufficient to protect me. I became less afraid."

> Even though there was the prospect of dying from it, I began to have clarity and focus, to know what I was living each day for.
>
> Yvonne Chan, Associate Consultant, Department of Infectious Diseases

Staff in the IW being trained on how to put on Powered Air-Purifying Respirators, which they wore on top of N95 masks in certain situations.

ID on-call for pneumonia (China)[17]

IW consultants had to field many calls about the new virus, on top of the usual ward rounds. While there were MOH criteria for a suspect case of the new illness, doctors instinctively knew the risk could not be limited to those strictly defined as suspects. Those possibly exposed included air crew, travellers who had met people from China while in Europe or America, taxi drivers who plied the airport route, and many more. In the earliest days, when the MOH criteria only included those who had been to Wuhan, there were plenty of worries about those who had come back from other parts of China. Which ward should such patients be admitted to if they had a cough? What if they did not have a cough but a leg fracture? And how should they be managed if they required an operation? The permutations were endless.

[17] The ID team learnt through the experience during SARS that fielding phone calls about the crisis was a job unto itself. A roster was created just for this purpose. In addition to established duties like ID on-call and Transplant ID on-call, the ID roster included an "ID on-call for pneumonia (China)".

Questions, questions, questions

And so, the ID team in the IW had their hands full just answering phone calls. ID physician Anson Wong remembered receiving a record of 120 calls in a day. "On one occasion, when I started to put on my gown and goggles to examine a patient, the calls came in a torrent. One hour passed before I could complete gowning up. But it was heartwarming to receive thank you messages in the evening from junior doctors who had contacted me several times during the day."

Amidst the confusion that reigned in those early days, some of the staff also directed their questions to nurses from Infection Prevention and Epidemiology (IPE). Infection Prevention Nurse (IPN) Molly How[18] recalled that they, too, went on a rota. The calls went on till 3:00am or 4:00am. "How do we transfer a suspect case to the IW?". "My patient's wife just came back from China, what PPE should we wear?"

As there was no textbook to refer to, the IPNs walked the staff through the best practices in infection prevention, step-by-step.

WIDENING THE CRITERIA

Keeping the community safe, preventing clusters from forming in SGH and in Singapore – that meant widening the net as to who should be isolated.

SGH did not just stick to official criteria for a suspect case when deciding who to isolate. This soon allowed the team to win another first – confirming the virus in the first local who had not travelled (and subsequently in her household members). This was a sentinel event that marked the start of community transmission of the virus in Singapore. Later in the outbreak, the ID team described the value of giving frontline doctors the leeway to isolate beyond official criteria. The team was happy when their principles found acceptance in an academic journal[19].

[18] Molly How, Senior Nurse Clinician (Speciality Care), Infection Prevention and Epidemiology.
[19] Wee LE et al. Containing COVID-19 in the emergency department: the role of improved case detection and segregation of suspect cases. Acad Emergency Med 2020;27:379.

Preparing the isolation ward

In early January 2020, ID doctors were already discussing with the IW nurses the possibility of an epidemic caused by the novel virus.

As the Senior Nurse Manager (SNM) of the IW, Ziyadah[20] had long experience working with the ID team and crafting a response to crises caused by emerging viruses in other countries.

This time, however, it felt different.

Protecting patients

It was decided that the usual isolation patients, such as those with tuberculosis (TB) or chickenpox, had to be separated from these suspects to prevent cross infection. Nursing suspected cases for emerging infections presented a different set of challenges for Ziyadah. "I decided to split all the isolation nurses into two teams. We also have a small isolation area in

Nurses who oversaw the isolation wards – (from left) SNM Ziyadah, SNM Suriana bte Sanwasi and Nurse Clinician Ding Xiu Hui, guided by Deputy Director Nursing Norhayati binte Ahmad.

[20] Ziyadah binte Zainuddin, Senior Nurse Manager, Ward 68 (Isolation).

ward 58[21], so I decided that nurses in ward 58 would operate on a different roster from nurses in ward 68. We could not afford cross contamination. This plan also meant I could transfer most of the usual isolation patients to ward 58. It was lucky that we did this – MOH quarantined five of my nurses, because they had been exposed to our second patient[22], when he was still hovering about outside his father's room.

"As it was the eve of CNY, there was already a shortage of manpower. The majority of the nurses on duty were not Mandarin-speaking and they faced a language barrier trying to communicate with the influx of new admissions of tourists from China. The patients were frustrated and distressed at being confined in isolation. But the staff were helpful – they sought out mobile phone charging cables and provided international calling cards so that the patients could contact their loved ones."

> Working in an IW can be terrifying. We can never be certain about the diseases that come knocking on our door. In mid-January 2020, we started receiving patients suspected to have that mysterious pneumonia from China. We were really worried about having enough stocks of PPE, including goggles and face shields. We sent our nurses for re-fitting to ensure they had the correct N95 masks. In a way, it gave them a sense of security.
>
> Muhammad Syafiq bin Abdul Manaf, Nurse Clinician, Ward 68 (Isolation)

[21] After SARS, a section of ward 58 was retrofitted to function as an isolation ward. Unlike ward 68 which is a purpose-built isolation ward, this is a no-frills isolation area, with negatively-pressured single rooms and dedicated staffing as the basic advantages.

[22] The son of the first COVID-19 patient also tested positive for the virus, and became SGH's second patient with the novel infection.

STEPPING UP WITH MUM'S SUPPORT

The moment I touched down at Changi Airport on Day 3 of CNY, I got a call from my senior asking for volunteers at the IW. I had been home in Malaysia for the holidays. Before leaving home, I had reassured my mum, "Don't worry, I'm in Haematology. I'm very safe."

In movies, people would want to be the hero and would readily volunteer their services. But when I was asked whether I would risk my life to do this, knowing there was no cure if infected, I hesitated. "Should I even do this?" I asked myself.

Then I thought, since I was living alone in Singapore, even if I got infected, there's less risk to others. Many of my medical officer (MO) friends were married or living with their parents. Initially I did not want to tell my mum because she had been really worried as my brother had just gone to China to be with his wife. I didn't want to add to her worries. But if I didn't tell her, I wouldn't be able to make up my mind to step up. I eventually called her, and she understood and agreed with my decision.

Kiasu[23] Seniors Keep Us Safe

When I joined the team in the IW, I wasn't very sure whether or not I would be safe, but the ID department and our seniors really took great care of us. The senior consultants would check in with us every single day, to ask how we were doing. When we had to use the full PPE, they took great care to ensure that all our steps were correct.

After managing the first few imported cases, we thought the worst was over. We were then shocked to diagnose the illness in a local who had not travelled and who did not have a clear history of contact with a known case. Fortunately, our seniors had been very protective and made us wear the full set of PPE throughout. Honestly, we had thought they were over-reacting, being kiasu. But in the light of the newly confirmed patient, whom we had thought was of really low risk, we finally understood why they were so cautious. That gave me the assurance that we were working in a safe and well-protected environment.

TAN SYE NEE
Resident, Internal Medicine

Sye Nee was doing her Haematology posting as a junior doctor when she volunteered at the IW in the first few days of the outbreak.

[23] A word used in colloquial Singaporean English. The Hokkien word means afraid to lose. It is almost always used metaphorically to refer to one who is "anxious not to lose out".

Moving the patient without breaking the cocoon

No patient should receive sub-optimal care just because of their isolation status. Yet, providing good care while adhering to infection prevention precautions was daunting. Scans have become an integral part of patient management in modern medicine. All too quickly, the inevitable had to be faced – scans that were indicated had to be performed, whether the patient was a confirmed or suspected COVID-19 case. Transporting them to Radiology Department had to become a fact of life, even in an epidemic. Moving such patients, however, would not be a walk in the park. Those from the ICU, with all the tubes, would be the most challenging.

Clearing the path

ID physician Anson decided to draw up a protocol on a day when he was not "ID on-call for Pneumonia (China)". Many people were involved in the logistics of patient transfer – Diagnostic Radiology, Environmental Services, isolation nurses, IPNs, security. Security had to clear the path – no one should accidentally come into the path of those suspected or confirmed to have the novel disease. The lift had to be controlled – the patient must not wait. Plans for possible collapse – "resuscitation points" – were also worked out along the way. To be extra sure, Anson conducted the dry run five times.

"Imagine four people looking like astronauts going into the lift with the patient who was connected via tubes to several machines. At that time, little was known about this virus, so on top of the N95 masks, we had to put on Powered Air-Purifying Respirators (PAPR). We went down to the

Moving very sick COVID-19 patients from the ICU to Radiology for scans involved a team of nurses, respiratory therapists, doctors and security staff.

details – where is the bed facing, where is the oxygen tank, who presses the lift buttons, who stands next to the patient in the lift. Only a few could get into the lift, so the rest of us would run up or down the stairs to get to the level before the lift arrived with the patient.

"Once, Security sent us so many officers that they must have been left with very few for other parts of the hospital. We needed six to transport an ECMO[24] patient to Radiology. This was a positive case. We could hear through their walkie talkies how frequently they communicated with each other. Security did an excellent job supporting us."

[24] ECMO stands for ExtraCorporeal Membrane Oxygenation. This machine supplies oxygen directly to the blood in patients whose lungs are so injured even a ventilator can no longer push oxygen through.

Preventing contamination

IPN Tan Kwee Yuen[25] checked out the scan rooms so that she would know what precautions to recommend. She noticed that CT scanners had many hard-to-reach joints that would be impossible to clean properly. She recommended that the scanner be plastic-wrapped before the COVID-19 suspect/patient arrived.

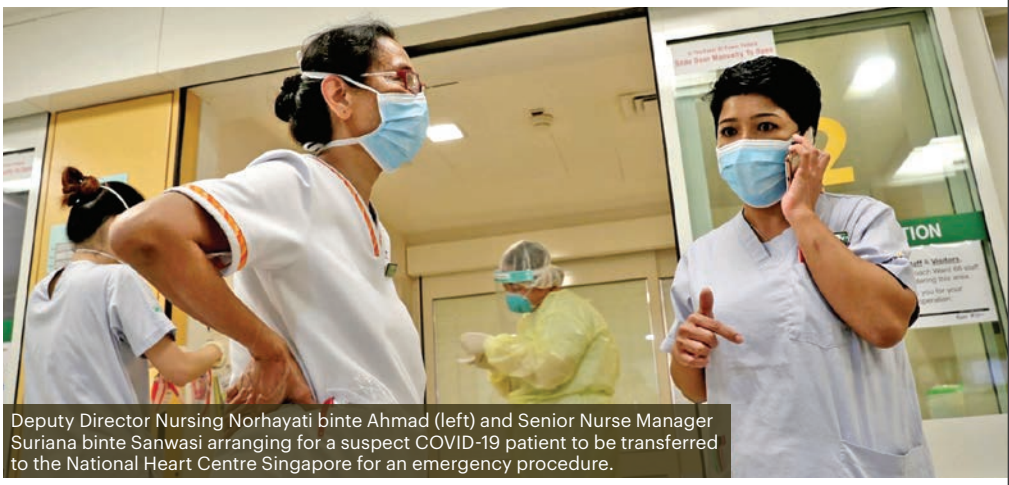
Her colleague Kamini Devi d/o Magesparan[26] came back to work on a Sunday when a COVID-19 patient needed an urgent CT scan. "It was my role to oversee the entire transfer process – watching over our staff to make sure that they stayed safe, that they were wearing the PPE correctly, and that there was no contamination during the transport from the IW to the Radiology Department."

Moving mountains for one patient

The ultimate test occurred when a COVID-19 suspect was diagnosed as having a heart attack and the patient had to go to the National Heart Centre Singapore (NHCS)[27] for cardiac catheterisation. Mounting the operation was a massive effort. Different resuscitation points were planned along the way. Yvonne paid tribute to the senior nursing staff. "The senior nurses, Sisters Ziyadah, Suriana[28] and Norhayati[29] came out in force to guide and coordinate with the Heart Centre – they helped with everything. Even though the transport was just 15 to 20 minutes, by the time the whole thing was finished, it was past 10:00pm. The three nurses were still in high spirits, and I was glad for their company."

---

[25] Tan Kwee Yuen, Senior Nurse Clinician (Speciality Care), Infection Prevention and Epidemiology.
[26] Kamini Devi d/o Magesparan, Senior Staff Nurse, Infection Prevention and Epidemiology.
[27] NHCS and SGH are linked by an enclosed bridge for easy patient transport by wheelchairs or trolley beds.
[28] Suriana binte Sanwasi, Senior Nurse Manager, Ward 58.
[29] Norhayati binte Ahmad, Deputy Director Nursing.



Deputy Director Nursing Norhayati binte Ahmad (left) and Senior Nurse Manager Suriana binte Sanwasi arranging for a suspect COVID-19 patient to be transferred to the National Heart Centre Singapore for an emergency procedure.

Making judgement calls

At the frontlines, the decision to admit a patient or to let him or her go home was no longer dependent solely on the patient's need for hospitalisation. Letting people go home when they had a cough or a fever but who were otherwise well – a routine in the past – could mean seeding the community with a case of the novel virus. Junior doctor Lynn Ong[30], then serving in the ED, described her internal turmoil.

"I got a call from the SGH Epidemiology team informing me that a patient I had seen the previous shift had tested positive. My thoughts ran wild as I racked my brain, trying to recall which patient had a telling history that I missed. It turned out to be someone with no risk factors apart from prolonged symptoms whom I had discharged after a swab, according to the latest MOH guidelines[31]. I tried to recall (to no avail) if I had done my hand hygiene and worn my PPE properly, and I could only place faith in my usual good practices. After that, even the slightest dryness in the throat in the morning triggered a flurry of anxious thoughts.

[30] Dr Lynn Ong, Medical Officer, Department of Emergency Medicine.

[31] MOH had a Swab and Send Home (SASH) policy, giving doctors guidance on the categories of patients who could be allowed to go home after a swab. Patients deemed to be of low risk were swabbed and then discharged home. They were instructed to isolate themselves until they received a call to inform them of a negative result.

"Then on another shift, I got a call from the Epidemiology team again. This time, it was a foreign worker with a week of cough and cold who tested positive. There had been some intermittent fever, but he was afebrile in the ED. Again, he fitted the 'swab and discharge' criteria.

"That's missing two patients. I was devastated."

Closing a chapter – Patient 1 goes home

> From the first two cases, we realised that this disease can manifest in different ways. The son was very well, didn't have pneumonia like his father. Yet, the father got discharged earlier because the son kept testing positive. At that time, we did not know that while some people may still swab positive, they are actually no longer infectious.
>
> Yvonne Chan, Associate Consultant, Department of Infectious Diseases

Nurse Syaheda[32] was one of those who attended to Patient 1 in the IW. "The patient was fearful, affected by his diagnosis. I tried my best to reassure him, despite a language barrier. I saw him hyperventilating as he read comments on social media blaming him and his family for bringing the virus to Singapore."

[32] Nur Syaheda binte Abdul Aziz, Senior Staff Nurse, Ward 68 (Isolation).

Getting the first patient home was an elaborate affair. As viruses were known to survive on surfaces, there was much concern that his belongings would have live, infectious viruses on them. IPN Kwee Yuen decided that whatever could be wiped down with antiviral/antibacterial wipes would be wiped down. Whatever could not would be subjected to ultraviolet irradiation.

Care continues outside the hospital

Medical social worker Vivian Chan[33] was involved in the discharge plans. "The patient, in his sixties, was travelling overseas for the first time. As he was discharged before his son, arrangements were made for him to be housed in a hotel. He wasn't very savvy digitally, so I helped him set up a WeChat app on his phone. The nurses were concerned that he might feel lost so they gave him the phone number of the IW. I accompanied him to the hotel, and I noticed that the hotel staff were initially reluctant to assist him with his luggage. That night, the patient called the ward, informing them that his blood pressure (BP) was sky-high! He owned a BP set and had brought it with him to Singapore. The ward nurses asked the doctor on-call to assist him and advice was given over the phone. Not comfortable with what had happened, we decided to bring him back to the ward the next day. The staff checked his BP device and calibrated it against the ward's BP set."

[33] Vivian Chan, Senior Medical Social Worker, Department of Medical Social Services.

Dodged the bullet in the heat of pandemic

The first patient agreed to an interview with the local Chinese newspaper Lianhe Zaobao. His account was reported on 20 February 2020 (the following excerpts are translated by SGH).

Mr Wang thought he could be discharged after three consecutive days of negative results, but the result returned positive on the fourth day, and he had to remain in hospital. Mr Wang said, "If the result had turned positive after I was discharged, wouldn't it be a bigger problem to the community? So, it was beneficial for me and responsible to the public that I stayed for a few more days."

Although he was in the hospital for 28 days, Mr Wang had fever only on the first three days and subsequently, just throat discomfort. His condition was more severe on the first two days, but did not require oxygen therapy.

Unfortunately, his son was also stricken with the disease and was Singapore's third confirmed case. The other eight family members continued with their trip, going on to Malaysia and four of them were subsequently confirmed to be infected. Mr Wang said, "I only knew that they were infected after they had been discharged. When I chatted with them on WeChat, they lied to me that they were well."

The meticulous care from the medical team also brought warmth to what became "the most unforgettable Spring festival[34]". Mr Wang said, "They were very caring, always offering words of comfort and asking if I needed anything. Although there was some language barrier, I could still feel their care and concern. I'm very impressed with their professionalism and sense of responsibility as they went about their work. They certainly have my respect."

[34] Chinese New Year is also referred to as the Spring festival in Mandarin.

On this trip to Singapore, which was also his first trip out of China, Mr Wang had only been to Sentosa. But he was thankful and felt that it was heaven's will that helped him escape an even worse fate had he been diagnosed with the infection back in China. "The situation in China is very complicated, too many patients, too few beds. I received very good care here and am very grateful to the medical team in Singapore."

住院28天康复

1号病例:来新度假让我躲过一劫

原以为入院后，连续三天的病毒检测结果呈阴性就能顺利出院，但第四天的阳性结果让他打消了出院的念头。王先生说："假如出院后，又从阴性变阳性，不是给社会带来更大的麻烦吗？多住几天对我是有好处的，对大家也是负责任的。"

本地首名冠病病患，来自中国山西的王先生（前排左三）昨天出院时，与中央医院医护人员合影，并且接受《联合早报》独家访问。（更多精彩中文报道请扫！）