CHAPTER 5

CLEARING THE DORMITORIES OF COVID-19

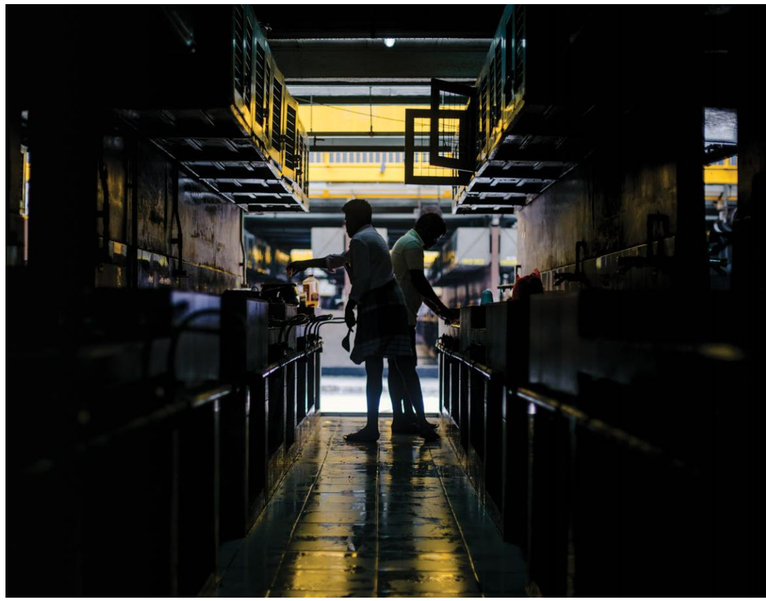
IN THE MIDST OF A RAGING PANDEMIC, SUCH CLOSE-QUARTER LIVING DESIGNS MEANT THAT THESE PURPOSE BUILT-DORMITORIES WERE TINDERBOXES WAITING TO BE IGNITED.

AS Singapore prepared for the circuit breaker in April 2020, a new COVID battlefront had opened that required precision targeting: its 43 purpose-built dormitories (PBDs) across the island.

Home to around 323,000 migrant workers, PBDs are large complexes that function as mini towns. They have minimarts and barber shops, offer services like laundry and remittances, and contain facilities such as gyms and outdoor recreation areas.

Each room holds up to 12 workers, sleeping in double-decker beds compactly arranged together. In normal times, such close-quarter living facilitated interaction and fostered cohesiveness among the workers, most of whom came from countries where communal living was the norm.

But in the midst of a raging pandemic, such designs meant that these PBDs were tinderboxes waiting to be ignited – the perfect setting for a contagious virus to spread like wildfire.



S11@Punggol, a sprawling purpose-built dormitory for migrant workers, was named as a COVID-19 cluster on Mar 30, 2020, when four confirmed cases were discovered. Over the next few weeks, the number of confirmed cases in the dormitory would continue to rise.

Cochrane Lodge II, a purpose-built dormitory for migrant workers, was one of several to be gazetted as isolation areas by the Ministry of Health in Apr 2020. The move was aimed at curbing the spread of COVID-19, and residents were not allowed to leave the premises for 14 days.

PHOTO: GETTY IMAGES/ORE HUIYING

"We started seeing, in rapid succession, outbreaks occurring in many dormitories...which was worrying because it suggested that the spread was occurring in several different settings", said Director of Medical Services Professor Kenneth Mak.

Cases began to surge among the migrant worker population, and cases in the community were rapidly increasing.

As Permanent Secretary for Health Mr Chan Yeng Kit put it: "We were on the verge of losing control; it was spreading." Drastic action was necessary.

A LOCKDOWN AMID A LOCKDOWN

Associate Professor Dan Yock Young recalled the snaking queues of migrant workers outside the Emergency Departments (EDs) of hospitals in the first week of April 2020.

"There were so many waiting to see a doctor, they were spilling out onto the roads...the hospitals just couldn't clear them fast enough," shared Assoc Prof Dan, the Ministry of Health's (MOH) Deputy Director of Medical Services (Health Services Group)*.

"We realised that we had a huge challenge. Because if the hospitals were paralysed, we would be overwhelmed."

There was little choice – the dormitories had to be sealed off. On April 6, 2020, three days before the country went into a national lockdown, the Government quickly set up the Joint Task Force (Assurance), also known as the JTF(A). Later that month, on April 26, 2020, the Medical Operations Task Force (MOTF) was set up.

The MOTF, led by MOH and supported by the Singapore Armed Forces (SAF), oversaw and coordinated on-the-ground healthcare efforts for the community and migrant workers.

The JTF(A) – comprising officers from MOH, the Ministry of Manpower (MOM), the National Environment Agency, the SAF, the Singapore Police Force and the Migrant Workers' Centre – would support the migrant worker population and dormitory operations alongside the MOTF.

On April 5, 2020, just a day before the JTF(A) was set up, the Government also gazetted two of the hardest hit PBDs as isolation areas: S11 Dormitory @ Punggol and Westlite Toh Guan. The move placed around 20,000 workers in a 14-day quarantine.

* WITH EFFECT FROM MAY 1, 2023, THE DEPUTY DIRECTOR OF MEDICAL SERVICES (HEALTH SERVICES GROUP) WAS RE-DESIGNATED AS THE DEPUTY DIRECTOR-GENERAL OF HEALTH (HEALTH SERVICES GROUP).

The Westlite Toh Guan dormitory in Jurong East was one of the first purpose-built dormitories to be gazetted as an isolation area due to a spike in COVID-19 cases within its community.

Five days later, on April 10, all dormitories island-wide had been sealed off in an attempt to detect and isolate every case. It was a community-specific measure during the circuit breaker – one that separated migrant workers from the rest of Singapore. In effect, it was two circuit breakers running in parallel.

"The idea was to ring-fence this spread so that we were not fighting a big fire, but multiple small fires we could at least contain," explained Prof Mak. "It would have been a nightmare scenario if there was free movement and free transmission and infection that occurred back and forth between the dormitories and community."

A critical aim was to cut off the virus' advance. "If we could contain the outbreak within the dormitories and not allow it to spread, maybe we would have a fighting chance," added Mr Chan.

To support the workers, the JTF(A) deployed teams to provide care. While its Forward Assurance and Support Teams (FAST) attended to daily needs such as food, welfare and ensured safe distancing measures, the MOTF would take charge of healthcare.

ACCELERATED PLANNING AND OPERATIONS

The MOH teams had only 48 hours to devise their medical support plans for the dormitories.

"Time was of the essence – we could not wait for a perfect plan. We had to execute the plan first, then refine and tweak it as it went along," explained Adjunct Associate Professor Raymond Chua, MOH's Deputy Director of Medical Services (Health Regulation Group) and Deputy Commander of the MOTF*.

"If we had waited for the perfect plan, the spread would have gone beyond control. We needed a timely rollout coupled with agility in our plans."

To optimise resources for all 43 PBDs, MOH tapped on its three public healthcare clusters: Singapore Health Services (SingHealth), the National Healthcare Group (NHG) and the National University Health System (NUHS) to augment the SAF Medical Corps, who were first to be deployed on the ground. Private medical groups were tasked to look after non-purpose-built dorms.

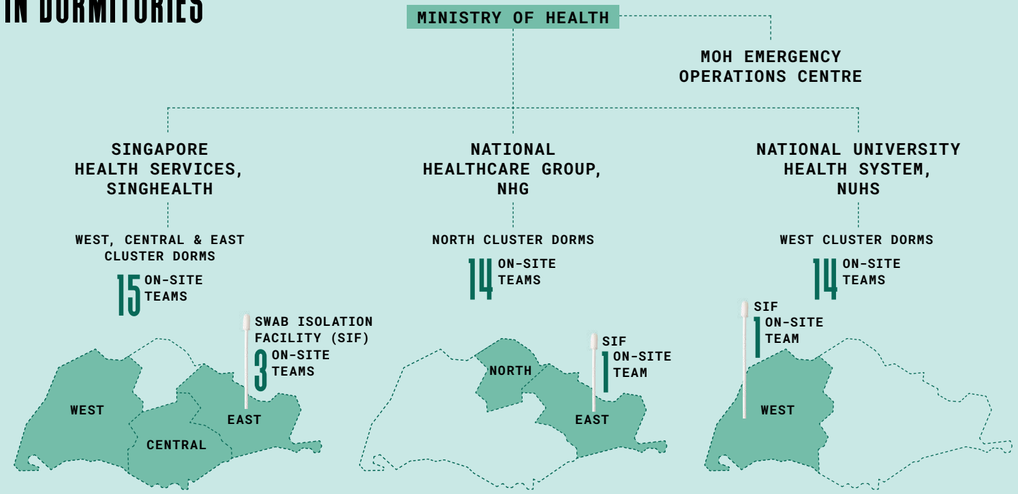
Each cluster would be responsible for 14 to 15 PBDs which were split regionally. NHG would take charge of the dorms in the north, NUHS would handle the west, while SingHealth would be responsible for the east, west and central areas.

Each cluster would also have a medical lead, who formulated the deployment strategies and implemented clinical control protocols for the respective dorms at breakneck speed.

* WITH EFFECT FROM MAY 1, 2023, THE DEPUTY DIRECTOR OF MEDICAL SERVICES (HEALTH REGULATION GROUP) WAS RE-DESIGNATED AS THE DEPUTY DIRECTOR-GENERAL OF HEALTH (HEALTH REGULATION GROUP).

PROVIDING MEDICAL CARE FOR MIGRANT WORKERS IN DORMITORIES

The Singapore Armed Forces Medical Corps was the first to enter the dormitories to help clear them of the virus. But as the number of positive cases among migrant workers kept rising and the COVID-19 clusters in the dormitories ballooned, the Ministry of Health deployed its three public healthcare clusters to provide ground support.



THE MISSION WAS CLEAR:

TO CONTAIN THE OUTBREAKS
IN THE DORMITORIES

IN THE SHORTEST TIME POSSIBLE.

The medical operations consisted of three key areas. First, to provide round-the-clock medical care for common ailments such as the flu as well as chronic diseases. Second, to render enhanced medical monitoring and support to workers who had contracted COVID-19. Lastly, to identify and transfer the potentially vulnerable and ill workers to other care facilities and hospitals.

"The key mission was to control and stop the outbreak," explained Assoc Prof Dan from MOH, who, together with Dr Andrew Aw, was one of the two Deputy Commanders (Medical) of the Joint Task Force.

This required two key courses of action: surveillance and segregation. For instance, there were daily routines where dormitories would screen their workers, and those feeling unwell would report to their dormitory operators. They would then be taken to temporary medical posts set up in each dormitory.

Besides isolating unwell workers, the general population had to be systematically segregated as well, depending on whether they had come into contact with positive cases. Older workers and those with pre-existing chronic health conditions who were more vulnerable to the virus were separated. Safe management measures were also instituted to disrupt transmission within the dormitories.

Nothing was left to chance, from designing routes that different groups of workers should take as they moved within the dorms, to designating toilets.

Medical teams comprising doctors, nurses and technicians were sent to dormitories around Singapore to test the migrant workers and treat those infected with COVID-19.

Ng Teng Fong General Hospital's healthcare workers fanned out to dormitories in the western part of Singapore to provide medical and mobile swabbing operations for migrant workers.

PHOTOS: NATIONAL UNIVERSITY HEALTH SYSTEM

The mission was clear: to contain the outbreaks in the dormitories in the shortest time possible. Within a week, medical posts had been set up in all PBDs, each fully staffed with teams of doctors, nurses and technicians. Tents had been erected, barriers installed and tables set up.

"There was a duty and quiet determination to make sure that we provided the best care possible for our migrant workers because they had helped to build our country," said Assoc Prof Dan. "At the same time, we knew that if we were able to clear the dorms of COVID-19, we would be able to protect the rest of Singapore."

The pressure was on. But things would only get worse before they got better.

PHOTO: NATIONAL UNIVERSITY HEALTH SYSTEM

Fully functional medical stations were set up within the dormitories, to enable healthcare workers to swab, screen and treat the migrant workers.

SWAB FORCE: TESTING 1,500 ESSENTIAL WORKERS IN 8 HOURS

FIRST CAME THE PAIN, then the tears. Eyes scrunched up in agony, a migrant worker jolted involuntarily as the straw-like swab stick plunged deep into his nose.

Behind him, hundreds more waited their turn to be tested by the 20 swab teams deployed to the sprawling, unused school campus at Bukit Merah on April 12, 2020.

It was a mass swabbing operation on a Sunday, conducted for essential workers who were plucked from their dormitories that were plagued by the COVID-19 outbreak and temporarily housed in the school.

This exercise was critical to sieve out essential workers who were well and able to keep the country's critical services operating, in the midst of the circuit breaker.

The medical crew, decked out in personal protective equipment, were racing against time. There were more than 1,500 people to test. Everyone had to be cleared by the day's end.

If the task sounded challenging, it was made even more daunting with a one-day advance notice to launch this operation. A "bombshell" was how Dr Edwin Low described the shock he received on a Saturday morning (April 11).

"That was a totally big surprise," he said, especially since he had only been in his new role as SingHealth's Lead of the Medical Operations Task Force (MOTF) for barely an hour before being given this assignment.

He recalled being told "mobilise whatever you think is necessary to do this" and accordingly sprang into action.

Within hours, the swab force was assembled, consisting of teams from Singapore General Hospital and National Dental Centre. Boxes of biohazard waste bags, swab sticks and other medical equipment were quickly packed.

The teams achieved the near impossible. By 6pm on Sunday, every migrant worker had been tested in just over eight hours.

The swabbing operation foreshadowed the need for more mass testing exercises in subsequent months to manage the COVID-19 spread.

Dr Edwin Low, SingHealth's Lead of the Medical Operations Task Force, was tasked to identify essential workers who were well, and could continue to work during the circuit breaker.

Securing an unused school campus in Bukit Merah, he organised a mass swabbing exercise for migrant workers who had been pulled out from their dormitories.

Associate Professor Dan Yock Young, Deputy Director of Medical Services (Health Services Group) at the Ministry of Health (right), worked closely with the Ministry of Manpower to coordinate the medical response at the dormitories.

On the ground, the different healthcare clusters were tasked to oversee dormitories in different parts of Singapore. **Associate Professor Thomas Loh**, medical lead at the National University Health System (left), was in charge of the medical operations at 14 dormitories in the west.

Professor Benjamin Seet (right) Deputy Group Chief Executive Officer (Education & Research) and medical lead at the National Healthcare Group, was tasked to oversee the medical operations across 14 dormitories in the north of Singapore.

PHOTO: NATIONAL HEALTHCARE GROUP

INTO THE FRAY

For most of the healthcare professionals, this was a step into unfamiliar territory. "The majority of our healthcare staff were trained to provide and organise care in hospitals or polyclinics – not out in the field," noted Assoc Prof Dan.

Medical leads in the three clusters recalled the uncertainty that gripped their teams prior to entering the dorms.

"There were quite a lot of unknowns. Besides entering areas that none of us were familiar with, we were also dealing with a virus we knew very little about at that point in time – how it spread, what was needed," said Professor Benjamin Seet, National Healthcare Group's medical lead and Deputy Group Chief Executive Officer (Education & Research), who oversaw their operations across 14 dormitories in the north.

Suddenly, the likes of neurologists, paediatricians and orthopaedic surgeons were all tasked to handle infectious diseases.

"We didn't know what to expect, because this was not within the normal realm of activities," noted Associate Professor Thomas Loh, NUHS' medical lead who was tasked to look after 14 dormitories in the west.

But they bravely entered the dormitories and encountered a virus that seemed unstoppable.

Massive clusters were popping up, with the S11 Dormitory @ Punggol rapidly becoming Singapore's biggest with over 2,000 cases. The medical team there struggled to halt the rampaging virus.

To focus testing efforts and resources, MOH decided that every migrant worker who showed acute respiratory symptoms would be treated as a COVID patient – no tests were necessary. The same applied to other severely affected dormitories.

The medical teams operated in formidable conditions. Logistics, security and communications all posed daily

HOTELS AND EXPO HALLS USED AS ISOLATION AND CARE FACILITIES

EVERY ROOM WAS FULL. So full that some migrant workers had to be put up in makeshift tents outdoors to recover.

As migrant workers contracted the virus in the hundreds, medical teams found themselves in a bind: where to isolate them and those awaiting their swab test results?

"The isolation facilities in a dormitory are very limited," said Dr Edwin Low, SingHealth's medical lead. "We kept running out of space."

This was where Swab Isolation Facilities (SIFs) and Community Care Facilities (CCFs) came into use.

Hotels were converted into SIFs to temporarily accommodate workers waiting for their swab results. COVID-positive patients with mild symptoms were transferred to chalets and convention halls that had been transformed into CCFs.

The majority of them were housed at the Singapore EXPO. The massive CCF complex, managed by SingHealth, could take in more than 3,000 recovering patients.

"The CCF made things a lot better," said Dr Low. "Because we're able to give them a safe isolation area, and care for them in a much more effective manner."

PHOTO: INTEGRATED HEALTH INFORMATION SYSTEMS PTE LTD

Community Care Facilities, such as the one at Singapore Expo and Max Atria (above), took in recovering COVID-19 patients who are mostly well, with mild symptoms and lower risk factors. These spaces were crucial in shifting the patient load away from hospitals.

"THE FACILITIES OFFERED TO US WERE LESS THAN IDEAL IN MANY SITUATIONS – CAR PARKS, BASKETBALL COURTS... IT WAS NOT SIMPLE...DEALING WITH ISSUES LIKE POWER SUPPLY, WATER, INFECTION CONTROL AND WASTE DISPOSAL."

– PROFESSOR BENJAMIN SEET, NATIONAL HEALTHCARE GROUP'S MEDICAL LEAD AND DEPUTY GROUP CHIEF EXECUTIVE OFFICER (EDUCATION & RESEARCH)

PHOTO: NATIONAL HEALTHCARE GROUP

In each dormitory, medical teams had to assess where the medical stations could be set up, and adapt their operations as they went along. This meant that the teams were working out of areas like basketball courts, car parks and canteens.

challenges that they had to solve by any possible means.

"The facilities offered to us were less than ideal in many situations – car parks, basketball courts," noted Prof Seet. "It was not simple – setting up in a car park and dealing with issues like power supply, water, infection control and waste disposal."

"It's all done on the fly," added Assoc Prof Loh. "In a war zone, you go in and see what your situation is, and then make a call. We did just that."

But what truly made it unbearable was the intense heat. In such open spaces, temperatures could reach up to a searing 37°C. Exposed to the elements in their stifling personal protective equipment (PPE), some healthcare employees could not endure the heat.

"They couldn't tolerate it. We had to let them rest," recounted Associate Professor Steven Thng, Senior Consultant at the National Skin Centre, who was Prof Seet's deputy on the ground. "We were desperately trying to see how to cool the deployed teams."

While air conditioners and air coolers were brought in, such equipment had to be deployed carefully. "Air coolers might circulate the virus," added Assoc Prof Thng. "So we even had to consult the infection control specialists on which was the best direction to blow the air towards."

PHOTO: NATIONAL UNIVERSITY HEALTH SYSTEM

The medical work in the dormitories was made even more challenging due to the intense heat. At times, healthcare workers were working at spaces where the temperatures reached 37°C.

To cool the premises down, air conditioners and air coolers were brought in, but these had to be strategically placed to not circulate the virus around the space.

The physical security of healthcare employees was also a concern. With small teams of people operating in massive dorms that housed thousands of migrant workers who had suddenly been restricted from moving freely within the premises, tensions were simmering.

In the initial stages of uncertainty and apprehension, there were also security concerns in dormitories that were locked down. The fear of rioting from a crowd under confinement was real, especially if the lockdown was prolonged.

"The mental health of the migrant workers was a big challenge. They were locked down, had limited access to information and often, we couldn't even communicate effectively what was happening or what our plans were to stop the outbreak," noted Assoc Prof Dan.

"So one can imagine how they were confused – being swabbed multiple times, moved around and yet still unable to go out."

There was also the issue of battle fatigue among the healthcare workers. "The lowest point was when the outbreak was raging. Despite our efforts, we seemed unable to stop the virus in the dorms," added Assoc Prof Dan. "We would self-doubt and wonder: were we ever going to win, or despite our efforts, witness the inevitable?"

FIGHTING AT THE FRONTLINES

"WE WERE RUNNING A 'MINI-COVID HOSPITAL' WITHIN THE DORM."

– DR LOH LIK ENG, SENIOR CONSULTANT AT KK WOMEN'S AND CHILDREN'S HOSPITAL, INTENSIVE CARE UNIT FOR CHILDREN

FOR PAEDIATRICIAN Dr Loh Lik Eng, it had been more than two decades since she last treated an adult patient – until COVID-19 hit.

Her medical world turned 180 degrees at the Shaw Lodge Dormitory, where she led a team of seven medical personnel to care for almost a thousand migrant workers.

From diagnosis to medication dosage, everything was different, shared the Senior Consultant at KK Women's and Children's Hospital who works at the Intensive Care Unit for children.

For instance, while medication prescribed for children had to be measured in micrograms, she and her team had to recalibrate this practice for adults. "We had to look up information, making sure we were doing things right," she recalled. "We were looking up chronic conditions that we don't deal with in kids."

For almost four months, the days were demanding, the pace intense. Daily operations ran like clockwork, with the team's morning rounds starting at 9.30am and ending at 4.30pm – amid the oppressive heat.

"We had to be gowned up, gloved up, and masked up," she said, describing the PPEs as "impermeable". "We were sweating like crazy."

As COVID-19 cases surged, healthcare institutions could not cope with the sheer number of patients. Many had to be treated at the dorm itself. "We were running a 'mini-COVID hospital' within the dorm," she added.

For some patients, frustration boiled over. "Some were so stressed by the situation that they would call you 10 times a night," recalled Dr Loh, who had an on-call phone to be contactable round the clock in case of emergencies.

It was not only the migrant workers who felt the fatigue – her team members felt it too. What they thought was a two-month stint suddenly seemed to have no finish line when the situation worsened.

"Every time we had a new outbreak, we just went 'oh no, it's not ending'," she shared. "How long was this going to last?"

As the days stretched on, the migrant workers began showing signs of distress at being cooped up in their rooms, with no sure sign of when they could be released. To assure them, the medical teams put up posters sharing information about the virus in different languages such as Mandarin, Tamil and Bengali. Counselling services were also offered to them.

MEETING OTHER CRITICAL NEEDS

With migrant workers confined to their lodgings for weeks, dorm operations went beyond providing medical and daily care, to boosting their morale as well.

"The stress was very high on the migrant workers," shared Assoc Prof Thng. "They had very little information, did not know what was happening, did not know when the end was in sight and they were kept in their bunks."

"Put yourself in their situation," added Dr Low. "You come here to work, now you can't work. You don't know if your company is going to fold. You don't know how your own family is back home. You can imagine a lot of things weighing on their minds and then being cooped up."

To assuage their concerns and enhance communications, the medical teams put up posters sharing information about the virus, which were translated into Mandarin, Tamil and Bengali. Holistic Outreach Teams provided counselling services for those who needed them.

Migrant workers themselves even created Facebook groups that translated and shared news from the media, MOM and MOH websites. The grassroots initiative was well appreciated.

For the medical staff toiling tirelessly on the ground, the leadership teams also ensured that they were well taken care of. Ice cream rounds, or "morale rounds" as described by Assoc Prof Thng, were daily affairs.

Working with sports complexes, some facilities were secured for staff to shower and change their clothes before heading home each day. As the virus raged on, it only spurred the battle-hardened teams to persevere. Everyone was dedicated to doing their duty.

The numbers, however, continued to rise. By May 2020, there were over 15,000 cases in the dormitories. But the Government would soon take a major step to turn things around.

"YOU CAN IMAGINE A LOT OF THINGS WEIGHING ON THE MIGRANT WORKERS' MINDS AND THEN BEING COOPED UP."

– ASSOC PROF STEVEN THNG, SENIOR CONSULTANT AT THE NATIONAL SKIN CENTRE

RESOLUTE PUSH TO GET CLEARED

In June 2020, the Singapore government stepped up efforts in proactive testing and screening of workers in the dormitories – whether they were symptomatic or not. The focus shifted from containing the outbreak to clearing it out from the dorms completely.

Two reasons underpinned the major move: to allow workers to resume work safely as Singapore emerged from the circuit breaker, and to identify asymptomatic cases that could be spreading the virus undetected.

"This testing was to make sure we did not miss any cases," explained Adj Assoc Prof Raymond Chua. "One of the things we wanted to do was to break the chain of transmission, which was complicated by the fact that people were asymptomatic. To be able to do so, we had to make sure that we tested everyone."

The testing strategy involved a three-pronged identification process: to distinguish those who had never been infected from those who had since recovered and those currently infected. This would help MOH better segregate the workers who had not been infected, and avoid isolating recovered workers for prolonged periods.

Serology tests would be the instrument of choice in dormitories with higher levels of infection. While Polymerase Chain Reaction (PCR) tests could only diagnose new or current infections, a serology test could identify whether a person had a previous history of infection by detecting COVID-19 antibodies in blood samples. This required personnel skilled in the medical art of phlebotomy – or drawing blood.

"That was quite challenging, having to get nurses and phlebotomists together and complete testing for about 60,000 workers in two to three weeks," said Assoc Prof Thng.

Over the next two months, more than 3,000 migrant workers were tested daily in operations lasting over eight hours. "After that first week, I became very good at blood-taking," quipped Assoc Prof Thng, a dermatologist by training.

PHOTO: NATIONAL UNIVERSITY HEALTH SYSTEM

In Jun 2020, the Government stepped up efforts in testing and screening workers, in a bid to clear it out from the dormitories completely. By Aug 11, 2020, testing for all 323,000 migrant workers was completed.

THE FOCUS SHIFTED FROM CONTAINING THE OUTBREAK TO CLEARING IT OUT FROM THE DORMS COMPLETELY.

But that tedious process marked the turning point of the dormitory battles, noted Dr Low. "It's basically systematically going dorm by dorm, and clearing all the people room by room...that started the route to normalcy," he said.

In one month, by July 2020, more than 70 per cent of workers had either recovered or tested negative. The early surge in cases – once the scourge of the medical teams – was also beginning to work in Singapore's favour.

"As more and more people were infected, the chances of getting immunity became higher," explained Adj Assoc Prof Chua.

By August 2020, testing for all workers was complete. Their confinement was finally over on August 11. For now, they were free to resume their jobs.

For the healthcare professionals, it was equally exhilarating to witness the migrant workers going back to work.

"It was testament to the work we had done – from providing medical care, to phlebotomy, to seeing them finally released into the community," said Assoc Prof Thng.

The numbers that the medical staff pulled off were staggering. In just over four months, the teams from SingHealth alone had completed over 51,000 swab tests and nearly 45,000 serology tests across 15 dormitories. Nearly 49,000 patients were seen and treated.

"I'm glad we were able to assemble a really sterling team that performed extraordinarily," said Dr Low. "They went day in, day out in very austere conditions, to do that kind of work – and they did it with a lot of compassion as well."

The efforts of the dormitory teams paid off for Singapore, as they paved the way for an integral part of the country's labour force to return to work. Just in time too, as the country had just recently reopened after a lockdown.

THE COVID SITUATION IN THE DORMITORIES

APR 5, 2020

2 DORMITORIES WERE GAZETTED AS ISOLATION AREAS

4 MONTHS

AUG 19, 2020

THE MINISTRY OF MANPOWER DECLARES ALL DORMITORIES CLEARED OF COVID-19

43
PURPOSE-BUILT DORMITORIES (PBDS) IN SINGAPORE

323,000
MIGRANT WORKERS LIVING IN PBDS, ALL COMPLETED SEROLOGY AND POLYMERASE CHAIN REACTION (PCR) TESTS

2
DEATHS FROM THE VIRUS

152,794
MIGRANT WORKERS DIAGNOSED WITH COVID-19

FIGURES WERE COMPILED FROM MAR TO DEC 2020