

Veteran's guiding hands

K. JANARTHANAN

When reports about the spread of Covid-19 from China began to emerge early this year, Sister K. Patmawali and her team braced themselves for an imminent outbreak in Singapore.

"We are always prepared for any form of emerging diseases," said the 62-year-old Assistant Director of Nursing who currently oversees the wards at the National Centre for Infectious Diseases (NCID) and has more than 45 years of nursing experience.

"Each pandemic or disease outbreak requires a unique skill set from the staff due to the difference in the collection of specimens. For instance, the junior staff are less familiar with nasal swab tests for Covid-19.

"Adjusting the patient's position, inserting the swab stick to collect the specimen, putting it in the bottle and sealing it properly for dispatch – these things have to be done with precision."

A leader of the disease outbreak workgroup, which plans for people, material and waste movement at NCID, Sister Patma had also mapped out the patient transfer routes between NCID and Tan Tock Seng Hospital.

Such early preparation, she said, allowed the NCID staff to act much faster when Covid-19 broke out in Singapore.

"After a table-top exercise involving planned route maps and scenario discussions showing the right entry, movement and exit points, we had the staff undergo drills on a regular basis, especially in the cases of patient transfer, direct admission to the hospital and deaths," she said.



PHOTO: TTSH

"We had also trained the staff on the procedures relating to increasing bed capacity and opening wards to deal with the surge of new patients in a matter of hours."

The NCID has 224 "negative pressure" (where air flows into the rooms, but not out of them) and isolation rooms, 330 beds and more than 100 "surge beds", which are used for emergency purposes.

Sister Patma said a real-time loca-

tion system, which tracks the movement of staff, patients and hospital inventory with an electronic tag, serves as a strong, added layer of precaution.

"Besides making contact tracing easier, the tag also reminds our staff to ensure proper hand hygiene," she said.

"These tags, among other procedures, will help to prevent high-risk patients from leaving the hospital."

Since her current role is mainly administrative, Sister Patma works of-

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– Sister K. Patmawali (left)

fice hours. When there is a need, she attends to patients.

The current situation, however, has led to long, late hours as she attends to the needs and concerns of her team.

"We do manpower planning in such a way that there will be senior staff to provide guidance to junior staff," she said.

"When every shift of nurses comes for duty, we do a 'safety huddle' – where instructions and updates are shared.

"In the course of my work, I always supervise my nurses to give them the confidence that they are safe when they go into a patient's room."

Her presence at the wards where nurses are taking care of Covid-19 patients has been described by her colleague Chen Jin as "empowering".

"She prepared us to respond quickly to the surge of Covid-19 patients by leading in the opening of new wards, redesigning work processes and frequently inspecting the ground to ensure adherence to infection control standards," said the senior nurse.

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Last-resort treatment saves Covid-19 patient

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It's an experience that Mr Toh Kai Kiat will never forget. The 54 year-old Singaporean, who works in the jewellery trade, was admitted to Khoo Teck Puat Hospital with fever on March 12, after returning from a business trip to Bangkok in late February. The same day, he tested positive for Covid-19.

Two days later, he was intubated and "proned" (placed on his stomach) as his condition worsened.

As the oxygen level in his blood continued deteriorating, a National University Hospital (NUH) team was called in to Khoo Teck Puat Hospital (KTPH) on March 17 to provide Mr Toh with Extracorporeal Membrane Oxygenation (ECMO) life support treatment.

ECMO is an artificial lung machine that helps a patient with diseased lungs recover. The machine extracts blood from the body, oxygenates it artificially and then pumps it back into the body. The procedure continues until the lungs recover.

Only Singapore General Hospital and NUH carry out ECMO treatment.

When the ECMO treatment began, Mr Toh suffered a cardiac arrest because of the high pressure in his lungs.

He had to be placed on a rarely used form of ECMO called venoarteriovenous ECMO. It supports the lungs and the heart.

Initially, the ECMO machine was configured only to support the lungs until Mr Toh's heart stopped beating for 16 minutes. The KTPH doctors had to perform cardiopulmonary resuscitation. Concurrently, the NUH team quickly reconfigured the ECMO machine so it could also support Mr Toh's heart. The timely intervention and the combined effort of the medical professionals kept Mr Toh alive.

Once Mr Toh's condition stabilised, he was moved to NUH for further ECMO treatment. After a couple of days, his heart condition stabilised.

Following a week of ECMO treatment, his lungs became stable enough for him to be placed on ventilator support. He was kept in the intensive care unit (ICU) where he was attended to by infectious diseases specialist Dr Jyoti Somani.

After continuous monitoring and rehabilitation for several weeks, Mr Toh was given the all-clear on April 22. He became the first Covid-19 NUH patient on ECMO to be discharged.

About 50 specialists had attended to him during his stay at the hospital.



Mr Toh Kai Kiat. PHOTO: CMG

"I want to thank all the healthcare workers who took care of everything and even the emotional needs of my family," said Mr Toh. "We have to take this disease very seriously."

According to NUH Senior Consultant (Department of Cardiac, Thoracic and Vascular Surgery) Dr Kollengode Ramanathan, ECMO treatment is administered when a patient experiences severe lung infection or failure and other treatments prove ineffective. Usually, with a pneumonia condition, it takes about two weeks of treatment

for the lungs to get better.

"This procedure is complex and complications can arise," he said. "You have to watch the patient's health condition closely and ensure the machine is functioning properly too. It takes a team effort to see patients through this treatment."

Dr Somani, Senior Consultant, Division of Infectious Diseases at NUH, said the challenges are two-fold: "While there is always uncertainty when we take care of very, very sick patients, with Covid-19 this is even more extreme as it is a new disease and we are still on a steep learning curve.

"While we can offer the best we have in terms of supportive treatment (including dialysis and ECMO if necessary), we do not know the most effective treatment for this disease yet and the ICU course can be very long for some patients. This uncertainty is difficult, but is to be expected for a new disease.

"Secondly, unlike most other very critical illnesses, this is one where patients are isolated from their family members. This can be heartbreaking and creates more stress, especially for the family members, and we must be sensitive to that."

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