

# Surviving Sars

## — *A Personal Journey*

By Dr Lee Kang Hoe

As we look back ten years ago and reflect on the SARS epidemic that befell Singapore in 2003, and led to 33 deaths, it is important to remember how the disease was eventually defeated and the bravery of many who stood up to the challenge. Healthcare workers are seldom put to such great personal risks in the course of their work, but SARS put our profession into the spotlight – questioning whether we were prepared to pay the ultimate sacrifice, as we strived to help our patients through this epidemic. Many colleagues were also infected with SARS and became patients themselves, and some even perished. It was certainly heartbreaking for us to see and hear of the many deaths, yet we had to soldier on in the fight to help contain the epidemic. We should salute the heroes and heroines who fought bravely to overcome the disease and never forget their sacrifices, even as we face the spectre of another epidemic, with bird flu and the novel coronavirus looming on the horizon.

My personal journey through SARS started in National University Hospital (NUH), where we had a pneumonia patient, who had been cleared by the Communicable Disease Centre (CDC), but she later deteriorated and required mechanical ventilation for respiratory failure. As her condition was worsening despite broad-spectrum antibiotic coverage, she underwent a bronchoscopy in the Medical Intensive Care Unit (MICU). Despite using an N95 mask, I was infected during the procedure. We did not have any powered air-purifying respirators in NUH at that time, as all such equipment was located at Tan Tock Seng Hospital (TTSH), the designated SARS hospital. Subsequently, we found out that the patient had also visited TTSH previously, and was confirmed to have SARS, as was her son. She died the following week after the bronchoscopy.

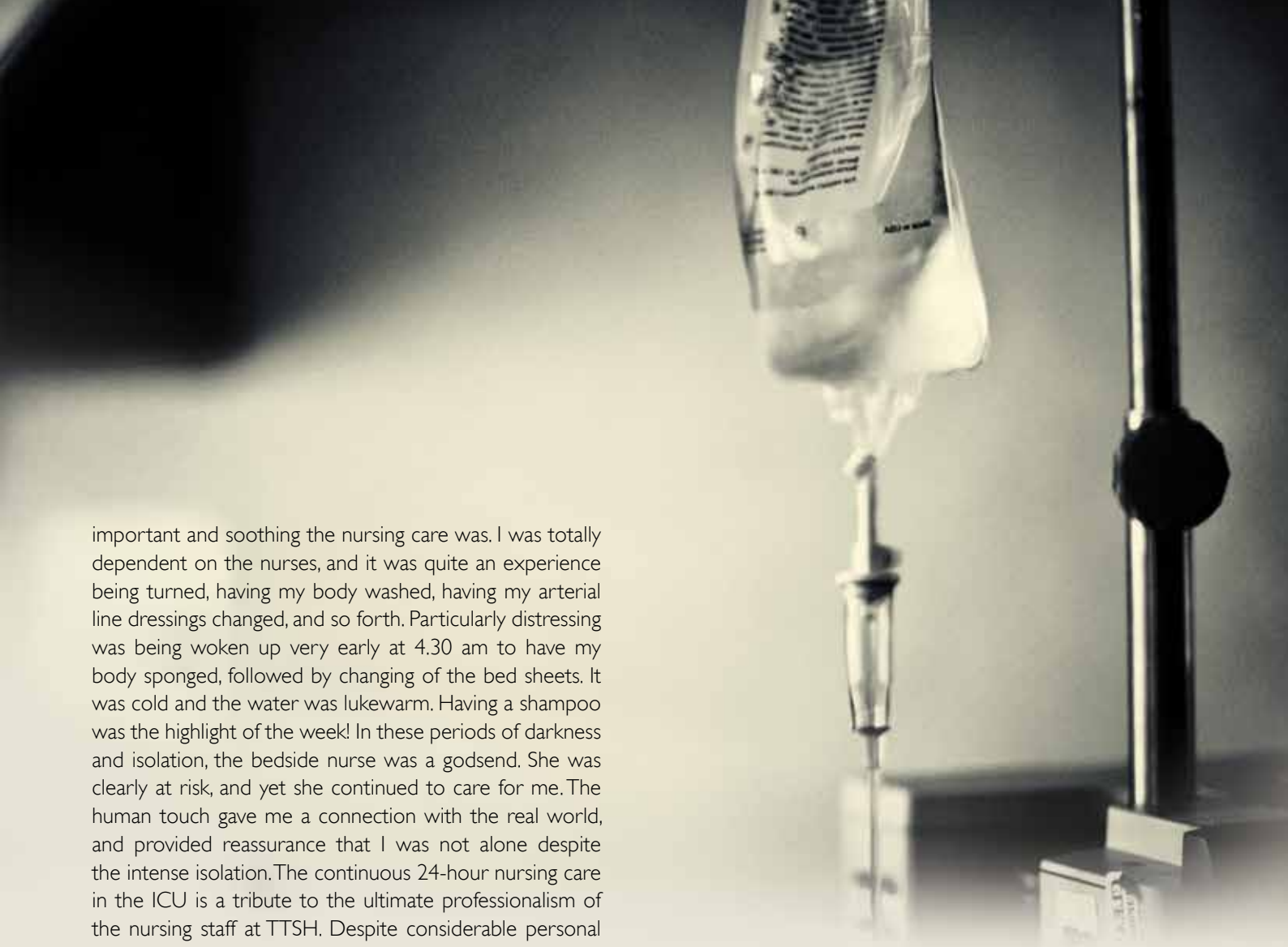
A few days later, I became ill with fever and back pain, and subsequently developed pneumonia. I went to the TTSH A&E department and was admitted after my chest X-ray (CXR) confirmed the pneumonia, although I had no specific respiratory symptoms. I was admitted to a single room and isolated. Being in isolation provided me with much time to reflect on my condition. I was helped by several visitors from the medical fraternity, who kindly

brought me food (especially ice cream), drinks and books, to sustain my spirits in those testing times. Unfortunately, my condition did not improve, so after five days, I had to be moved to the ICU as my oxygen levels were falling after a particularly painful arterial blood gas episode. It was clear to me that this was a serious development, so I immediately wrote my will after my admission to the ICU.

In the ICU, my lung function continued to worsen and I was placed on a noninvasive ventilator (BiPAPVision) with a full face mask. This allowed me an extra few days before I was eventually intubated. I also undertook a CT scan for thorax at the National Neuroscience Institute, which was quite a difficult undertaking, as I could not hold my breath for the scan due to my poor lung function. While intubated, my condition apparently deteriorated with severe acute respiratory distress syndrome. My chances of survival were poor, and my family was duly informed. Even my previous mentor at University of Pittsburgh Medical Center, Prof Michael Pinsky, was told about my condition.

Somehow, I started to improve, and my sedation was reduced. I remember vividly waking up several times with different delusions with regard to my location. My very first recollection was thinking that I was in a spaceship. Looking out at the nursing areas where the X-ray box lights were turned on at night, with nurses walking around in full protective clothing, somehow reminded me of *Star Trek*. The second time, I thought I was in an Amazon rainforest about to be eaten by cannibals. I felt I was on a rotisserie – slowly being turned on a pole, actually an endotracheal tube (ET), that had impaled me! And lastly, I woke up thinking I was at a sashimi counter, and was one of the raw fish in the glass cabinet, having a conversation with the other raw fish, sharing last moments with these fellow unfortunate creatures! All these delusions I felt were due to the cocktail of sedation that I was receiving. I was quite adamant that I should be fully sedated and then woken up daily for the weaning trial, and there should not be any twilight zone. Interestingly, I subsequently found out that other ICU patients who had post-traumatic stress disorder also reported very similar moments.

While intubated and lying in bed helpless, I realised how



important and soothing the nursing care was. I was totally dependent on the nurses, and it was quite an experience being turned, having my body washed, having my arterial line dressings changed, and so forth. Particularly distressing was being woken up very early at 4.30 am to have my body sponged, followed by changing of the bed sheets. It was cold and the water was lukewarm. Having a shampoo was the highlight of the week! In these periods of darkness and isolation, the bedside nurse was a godsend. She was clearly at risk, and yet she continued to care for me. The human touch gave me a connection with the real world, and provided reassurance that I was not alone despite the intense isolation. The continuous 24-hour nursing care in the ICU is a tribute to the ultimate professionalism of the nursing staff at TTSH. Despite considerable personal health risks and their fellow ICU nurses falling ill, there was nary a complaint or hesitation while they looked after me. On the contrary, they were like angels from heaven, providing cheer, comfort and care round the clock. There is no doubt in my mind that they were heroines in the whole chapter on SARS, and should engender gratitude from the whole nation for their steadfastness. Therefore, my personal hope is that these heroines be recognised for their contributions with lifelong healthcare insurance provided by the Courage Fund.

When I was finally extubated, I still required noninvasive ventilator support, especially at night. It was difficult to perform any physical activity as I would desaturate very quickly. I could barely brush my teeth and needed to keep stopping to put the oxygen mask back on. Sitting up was very tiring and would take my breath away. I could see the obvious wasting in my leg muscles and tried to will myself to get stronger with regular isometric exercises in bed and slow cycling exercises. The physiotherapist was very helpful in coming to see me and helping my rehabilitative efforts. Meanwhile, the high-flow oxygen was dehydrating and caused my upper airways to block off very quickly. The respiratory therapists were very helpful in their attempts to humidify the oxygen to minimise this problem. All in all, the entire team was extremely helpful to me despite the personal risks of entering my room.

**Photos: American Medical Association and iStockphoto**

Food was brought in from different restaurants for the staff at TTSH as part of community efforts to help healthcare workers, and I was offered some of these choices instead of the usual TTSH fare, which brightened my mealtimes considerably. I also received McChicken burgers and crocodile soup from my other half. As I was recovering, I kept in contact with more people through SMS, and a portable fax machine. BBC World Service on the radio was a constant 24-hour companion. I would also read the *Straits Times* voraciously, especially for news on SARS events and new cases of SARS infections. Additionally, the Iraq War was another hot topic at that time.

As part of my time in the ICU, I became acquainted first-hand with all the nursing activities conducted there: ET suctioning (one of the most painful experiences for an intubated patient), bedpans (clearly not designed for the male anatomy), commodes, urinals, dressing changes, body sponges, shampoos, and injections (IV and subcutaneous). I also personally experienced the feeling of being paralysed and not sedated, while having my arterial line inserted after intubation! These have been invaluable insights that one can treasure after the event!

While slowly recovering in the ICU, I developed fever one day. This was worrying for me, as I was concerned about a new infection and possible reintubation. I felt that

a reintubation would be a fatal event. The central line was removed after some delay, along with my arterial line, and new antibiotics were commenced. IV vancomycin was very painfully delivered through the peripheral veins, and the venula needed to be changed frequently. I was also shown my thorax CT scan and CXR (later used as illustrations in a *JAMA* paper published in July 2003),<sup>1</sup> which showed very extensive fibrotic changes, and I was concerned I would become a respiratory cripple as well. So I redoubled my exercise efforts, and vowed to overcome the problem.

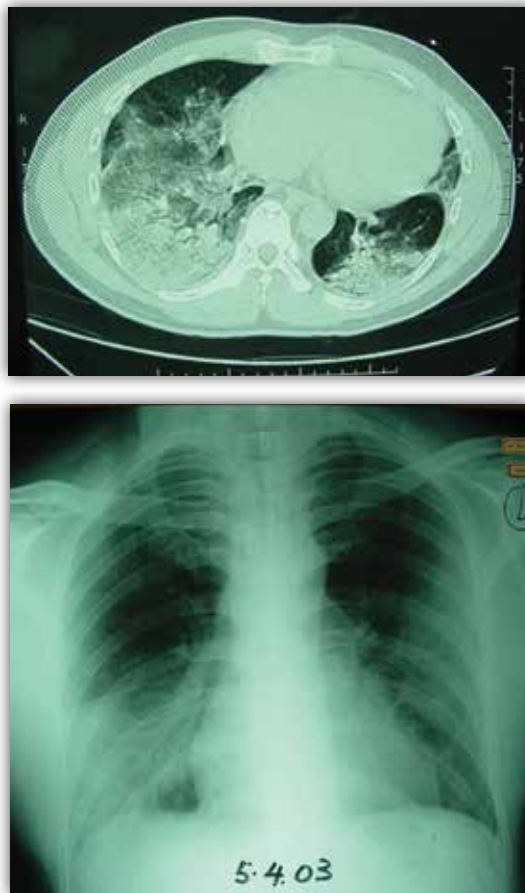
During the post-extubation phase in the ICU, I became more aware of what was going on within its walls. I became aware of new admissions, those who had been there for some time, and those who did not make it. Only 38% survived intubation. I was shown many CXRs as well, and shared some of my thoughts. The scale of the devastation and its effect on many people was quite astounding. However, the response of the community and all those close to me was also very heartening. The prayers, well wishes, little gifts, and all the paper cranes folded for me by the ICU nurses at NUH, and the courageous team at TTSH carried me through the whole episode. A salient lesson to learn from the SARS epidemic was the importance of teamwork and the power of standing united in the face of adversity.

I was eventually allowed to leave the ICU and moved to a ward. However, I shared the same room with two other new SARS cases. It was heavenly to have my first shower after one month, despite the need for intranasal oxygen even in the shower. I was very keen to leave TTSH and was eventually allowed to do so nearly five weeks after my admission. Looking out from the London cab that delivered me back home was a surreal experience. The streets were fairly empty and there was little traffic. There was still an issue with the two weeks' quarantine. I was still extremely weak and the saturation of peripheral oxygen of the air in my room was only 92%, and falling rapidly to 83% on ambulation. So I had a portable finger

pulse oximeter delivered to my doorstep! Cisco had also installed a webcam to monitor my quarantine. During this time, I was fortunate to be looked after by my other half who was not afraid for her own health. Unfortunately, the two weeks' quarantine did not come with home food delivery services!

My exercise regimen and diet became my new work for the next two weeks. I exercised with a stepper, exercise rubber bands and walked around inside the apartment to try to rebuild muscles, especially in the legs. I had lost ten kilograms during the TTSH stay. In all, it took me one whole year to recover my fitness with determined exercise. I celebrated this achievement by walking up Eiffel Tower in Paris exactly one year later.

As life returned to normality, I went back to work. Later in 2003, a memorial service was held in the Singapore Botanic Gardens, and the Courage Awards ceremony was held at Suntec City. These gatherings provided closure for the chapter on SARS and also allowed people to meet up again, outside the hospital setting and in normal surroundings. The shared suffering created an atmosphere of camaraderie, which was tinged with sadness for those who had succumbed to the illness and were no longer among us. There was not a trace of bitterness for having suffered. Instead, there was a sense of gratitude that we had all survived intact, and that we all belonged to a bigger family that had stood steadfast in the face of adversity together. **SMA**



Dr Lee's thorax CT scan (top) and CXR  
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## Reference

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