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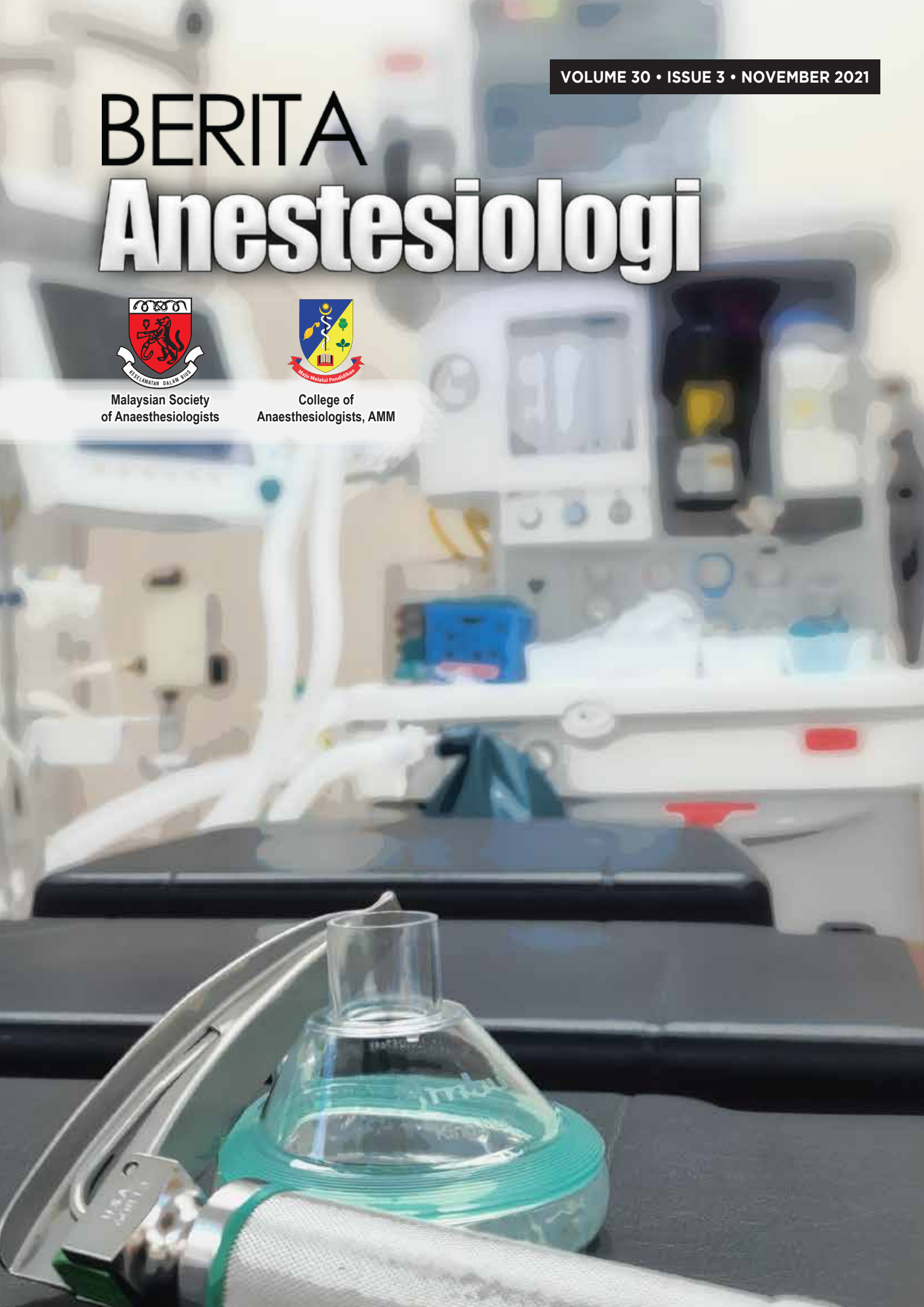
BERITA Anestesiologi

Malaysian Society of Anaesthesiologists

College of Anaesthesiologists, AMM



Message from the President of the MSA

Professor Dr Ina Ismiarti Shariffuddin

Dear Members,

Over the last two years, fighting the COVID-19 pandemic has been a challenge. Alhamdulillah, we have stood strong together as a fraternity to serve the Malaysian public and combat the unseen enemy. Through TEAMWORK, we have developed endurance and resilience in facing hardship. The shortcomings, in terms of hospital facilities and equipment, have taught us creativity as we strive to provide the best care for critically ill patients. Despite stretching our limited resources, we tried to give a fair chance to every patient and had to make difficult choices and decisions; many of which weight heavy on the mind.

Many of us faced a lot of stress and, I believe, suffered mental and physical breakdowns as a consequence of being the last line of frontliners. However, moving forward, much more needs to be done to persevere in this battle against COVID-19. First and foremost, we need to reopen our anaesthetic services for elective cases which, unfortunately, have taken a back seat for the last year. We will be instrumental in overcoming the backlog of postponed cases. Again, we will need to answer the call to arms. So, dear colleagues and friends, take a rest, have a break, recharge, come back stronger with more passion to providing the best anaesthetic care we can to our patients.

I am humbled by the opportunity to serve as President and honoured to lead MSA for the year 2021-2023. We are blessed with many dedicated volunteers who care deeply about our discipline, its standing, and contributions in a fast-changing environment. We will do our best to make you proud of your association with the Society.

Since the last Newsletter in July 2021, MSA has organised activities as listed below:

MSA & CoA ASC 2021

This year we had our first virtual annual scientific congress from 6th to 8th August 2021. The congress successfully attracted 1393 delegates, including foreign delegates from South Korea and the Philippines. We had 62 speakers, consisting of 23 international speakers and 39 local speakers. Nineteen pharmaceutical companies participated in the virtual booth exhibition. The abstracts for oral and poster presentations from this congress will be published as a supplement of the UKM's Medicine and Health Journal. In this congress, MSA conferred honorary membership on Professor Dr Haji Karis Misran. We also had our first virtual AGM. I would like to congratulate and welcome the MSA Executive Committee 2021-2022 and thank the immediate past president, Professor Dr Marzida Mansor, for her excellent leadership and all the previous Executive Committee members for sacrificing their precious time and effort for the Society.

National Anaesthesia Day Celebration 2021

Every year, on 16th October, we celebrate World Anaesthesia Day to commemorate the birth of anaesthesia. The NAD 2021 was launched by the Yg Bhg Tan Sri Dato' Seri Dr Noor Hisham Abdullah, the Director-General of Health. The theme of our celebration this year is "Stronger Together."

The celebration was unique, as this was the first time it was organised by the private anaesthesiologists group in collaboration with the MSA and the College of Anaesthesiologists. The organising chair was Dr Gunalan Palari Arumugam. We believe that everyone enjoyed the activities conducted by the organising committee to encourage all our members to embrace the NAD theme.

The virtual fun run garnered over 9600 pledges from 1981 runners for 51 registered teams representing the various hospitals. This was truly an amazing response from the anaesthesia fraternity and the public, pledging their runs to their favourite hospitals. Congratulations to the 'Hobin Jang Hobin' runners, representing Hospital Tuanku Ja'afar Seremban, for the commanding victory. They took home a trophy and prize money of RM2000. The Quiz also attracted participation from 173 anaesthesiologists and future anaesthesiologists. The first prize winner, Dr Gary Leong Wei Kean, took home a cash prize of RM250. We received entries from 10 hospitals all over Malaysia for our "Anaesthesiologist's got talent" competition on this special day. The HKL team won the competition and took home a cash prize of RM1000.

We also conducted an interesting forum, tackling the very pertinent topic of resilience, in which renowned senior and young anaesthesiologists shared their views and experiences on maintaining resilience in Anaesthesia. The

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Message from the Editor-in-Chief

Welcome to the November 2021 issue of the Berita Anestesiologi, the sixth issue of the "makeover" newsletter. The Editorial Board has received many contributions from budding authors of our fraternity. We have also witnessed talents, obvious and hidden, during the recent and previous National Anaesthesia Day celebrations. The creative streak is alive and well!

As evident by this issue, our graphic editor, Dr Haslan Ghazali, has given the newsletter a facelift. Apart from the usual article contribution, I would like to encourage members to also contribute anaesthesia photos which we can include in the coming issues. Berita Anestesiologi is our platform to be heard (and seen).

Live long and prosper!

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celebration ended with the launching of the MSA Yearbook 2020/2021 on the theme *'Evolution and Revolution'*. The book looked upon the past and how it has evolved or revolved to the current practice and future prospects. It covered specific domains in Anaesthesiology, which includes Clinical Anaesthesiology, Critical Care, and Pain Medicine. The celebration's peak was the soft launch of the Malaysian Journal of Anaesthesiology (MyJA), the official journal of the MSA and the College of Anaesthesiologists. The first edition of this peer-reviewed journal is expected to be published in March 2022. We encourage all members to send in their case reports or case series, original research articles, and brief communication to MyJA. All submission details can be found on myja.pub starting from next month.

K. Inbasegaran Research Grant

The MSA is pleased to support budding researchers in our fraternity. We hope to receive many applications for the K. Inbasegaran Research grant, as the application date is still open until 31st December 2021. A special committee has been set up to evaluate all the applications, and the results will be announced in the first quarter of 2022.

Future Activities Planned for 2022

1. We will continue the monthly CME webinars in collaboration with the College of Anaesthesiologists. Among the topics that we plan to cover in the near future are medico-legal issues in Anaesthesia and Critical Care, Updates in Daycare Anaesthesia, and Advanced Haemodynamic Management in Anaesthesia and Critical Care.

2. MSA and CoA Annual Scientific Congress 2022 - Shangri-La, Kuala Lumpur, 4th to 7th August 2022. The Organising Committee is planning for a hybrid of physical and virtual congress.

I would like to encourage all members of the Society to send us suggestions and ideas to consider for our future activities.

Please feel free to write to secretariat@msa.asm.org.my. I will be leading a Society that is responsive to direct input from its members. Till we meet again in another issue, I wish all of you to stay safe and healthy.

Contents

A COVID Diary of Hospital Sungai Buloh

by Dr Eng Kar Seng
Hospital Sungai Buloh

Just a week before Chinese Lunar New Year 2020, I still vividly remembered Dr Lee See Pheng voicing his concerns about how the next pandemic would hit us soon. I was completing my second year intensive care training, totally ignorant about the magnitude of a pandemic. It seemed like an astonishing feat how the Chinese government could build and complete a hospital in merely ten days when Wuhan was plagued by an unknown virus spreading at an alarming pace.

On a fateful Monday, March the 13th, to be exact, I received a call from the head of intensive care to report to Hospital Sungai Buloh because of the escalating number of critically ill COVID patients. I was excited yet anxious about the role, not only as a frontliner but also as a junior intensivist about to manage COVID in the epicentre of Klang Valley. I only had a couple of days to get updated on the latest literature on this novel coronavirus. Then, it was believed that only supportive treatment was necessary, just like any viral pneumonia-causing Acute Respiratory Distress Syndrome (ARDS).

March the 23rd, 2020, I reported to my final year placement, Hospital Sungai Buloh. The Intensive Care Units were already accommodating approximately 20 critically ill COVID patients. Non-COVID patients had been decanted to other Klang Valley hospitals. Existing services such as elective surgeries had been scaled down, and surgical teams were being deployed to other hospitals in preparation to turn Hospital Sungai Buloh into a COVID hospital entirely. Our Head of Intensive Care Subspecialty Programme came to help manage this new disease with the existing team and prepared us for the worst. A plan was in place.

The surge capacity intended for this hospital was a 100 bedded ICU, an almost impossible task, a mind-blowing number, as this hospital had been designed to house only 42 ICU patients at the most. The breakdown of this would be West Wing ICU (24), East Wing ICU (18), CCU (7), Burn Unit (10), and the repurposed areas in General Recovery OT (18), Daycare Recovery OT (14) and Medical HDU (10).

It took me a while to learn the process of donning and doffing. The first few days of managing patients were immensely stressful due to the fear of the unknown, fear of contracting the disease and worse of all, the fear of spreading the disease to our loved ones. We took longer than usual to intubate and sort out the patient's intravenous and intra-arterial lines. Our vision was often impaired by the evaporation of sweat on our visors. After attending to a patient, we were often drenched in sweat, more so after resuscitating an unstable patient. This resulted in shower after shower at any hour of every day. The physical exhaustion on top of the mental strain started to take a toll on each one of us.

Regarding management, we complied with lung protective strategies, prone ventilation and restrictive fluid strategy as we have been trained to do. Patients were treated with a combination of Lopinavir-ritonavir, hydroxychloroquine, and interferon. None are used in current practise as the evidence is equivocal at best. We also started them on low dose methylprednisolone for those with 'hot' ARDS. Intubated COVID patients were more difficult to manage and took much longer to wean. Extubating patients while they still had high inflammatory marker levels was not a wise move, i.e. CRP >70mg/L.

The first surge of patients was mainly from the religious event cluster, where most came with delayed presentation and severe ARDS and acute kidney injury. Some stayed for over a month in ICU. Hence dealing with COVID was indeed a monumental task. Thankfully, I have a formidable team comprising intensivists, anaesthesiologists, medical officers, nurses, medical assistants and support staff. We also had the unwavering support of our fraternity, who sent intensivists, anaesthesiologists and medical officers on rotation from both KKM and private institutions to fight the first surge. The maximum number of patients we had in ICU was approximately 35 patients at any given time. We had 131 admissions from March to June 2020 with 13 deaths, with a low mortality rate of 9.9%.

Every life saved was an achievement, and every life lost was discussed in a multidisciplinary meeting to see what could have been improved, turning every patient into a lesson learnt for better or worse. We were a proud and contented group of frontliners, or as we called ourselves 'the last defence', honoured by the opportunity to serve the country while receiving widespread recognition.

Little did we know, the battle against COVID was not a SPRINT; it was and still is a MARATHON.

We had ZERO admissions from July to September 2020 and gradually resumed our non-COVID duties. Life was slowly getting back to normal; the light at the end of the tunnel was shining brightly. Life was good.

The second wave hit us like a freight train. With sinking hearts, we watched the crowd turned up in droves to vote during the Sabah elections; SOPs were flouted, caution was thrown out of the window. Our happiness was short-lived. As we quickly got back to the groove and decanted non-COVID cases, our team was hit by the departure of our chief intensivist. This was also when we had a few healthcare workers contracting COVID, likely from the workplace due to possibly ill-fitting n95s. When any one of us contracted COVID or were close contacts, the number of workers being quarantined was large enough to interfere or even paralyze our workforce.

We had to increase our bed capacity gradually up to twice our COVID patient capacity (60 ICU beds) given the relentless referrals of category five patients. It was very tough and taxing as we struggled with an inadequate number of doctors and nurses. Referrals were coming from both government and private hospitals in the Klang Valley. We could never have survived this phase without the prompt arrival of fresh anaesthesiology Master graduates from various universities and intensivists from government and university hospitals. Non-ICU trained ward and clinic nurses were relocated and sent to ICU for a daunting task. A buddy system was quickly created to guide the junior nurses. To achieve good patient outcomes, a treatment protocol was revised and adhered to (both by doctors and nurses). The number of admissions peaked in January 2021, when we had a staggering number of 288 patients in that month itself (approximately 9 to 10 admissions to ICU per day!). The mortality rate at this surge was around 13-18%.

The conundrum of steroid use dates back to many decades ago for clinicians in various clinical scenarios. We practised using higher doses of steroids for patients after the hyperinflammatory phase, typically at day 10 to 12 when their CRP was low, but they remained poorly oxygenated. Pulsed steroids up to a total dosage of 5 grams of methylprednisolone were given to patients with CT evidence of secondary organising pneumonia, or worsening CXR infiltrates (not attributed by new bouts of sepsis/pneumonia). The landmark RECOVERY trial concluded that intravenous dexamethasone 6mg OD reduces mortality in COVID patients requiring oxygenation. The Malaysian Society of Intensive Care produced a guideline for steroid therapy recommending intravenous dexamethasone 20mg OD. As we practised evidence-based steroid therapy, some patients improved while there was still a proportion of patients who required higher doses and prolonged steroids. This was done with the knowledge that steroids suppress the immune system and could predispose to sepsis and sepsis kills. Hence, I believe that one size does not fit all. I think the practice of individualized steroid use is the way to go.

Prone ventilation remained our best weapon to improve lung oxygenation. The commitment of the team of doctors and nurses was unquestionable as we could prone 3 to 4 patients in one night. Even the morbidly obese patients were flipped tirelessly like roti canai to save their lives. We usually would not prone a patient more

than three times. However, there were a few occasions where we prone positioned a patient up to seven times due to desperation. A muscle relaxant was given, but we ensured that paralysis infusion was not continued for more than 48 to 72 hours as we had seen significant myopathy in those given prolonged infusions.

After a year of battling COVID, we finally got our vaccines in March 2021. Just as we thought cases were coming down and we could get some breathing space, the now notorious delta variant struck us in April. This third wave which escalated in May, was what I regarded as the COVID apocalypse. It was also our country's darkest days since the beginning of the pandemic, where daily cases of 20,000 were recorded. The light at the end of the tunnel had disappeared. A central command for ICU bed monitoring was established, and all hospitals allocated the maximum number of beds for COVID patients. In May 2021, the maximum number of Klang Valley ICU beds allocated for COVID patients was only 216. Patients arriving from MAEPS and COVID Assessment Centres (CACs) to our emergency department were transferred to other hospitals in the Klang Valley and Seremban for ICU care via Isopod activation as we could not care for everyone. The number of referrals per day to our ICU was approximately 15 patients, and we already had 50 category five patients in the general wards and emergency department.

Within a couple of weeks, most ICUs in the Klang Valley were filled to the brim. With the same number of staff, Hospital Sungai Buloh opened up to 85 ICU beds by July. One anaesthesiologist was managing 23 patients, while one medical officer was managing ten patients. One "stable" admission would also mean setting up arterial line, central venous line, prone, clerking, family updates via phone, and reassessment. One could imagine the amount of work put into an "unstable" patient. We were grateful as medical officers from surgical/ENT/dental/ophthalmology were deployed to join this war.

The Emergency Department was crowded by endless intubated patients who could not make it for ICU care. Our peripheral on-call team would receive more than 30 referrals in a day. Peripheral passover board became multiple boards, colour-coded to ensure nothing was missed. Forty plus-year-olds replaced the 60 plus-year-olds in ICU. Strangely, that became the new norm. Triaging patients during this difficult time was extremely challenging as we noticed an upsurge of younger patients developing severe COVID (20 to 40-year-olds).

My specialists would always confide in me that deciding who gets and who does not get an ICU bed haunted them long after leaving the hospital for the day. Not long after, we lost our youngest patient, a 19-year-old who came in with multiorgan failure. Although we vowed to do better, the number of young patients dying just kept growing despite our best efforts. Some young patients were ventilated for weeks on a high ventilator setting without any improvement in oxygenation. ICU care aims to allow a dignified death if it cannot be prevented. Guilt and sadness were soon replaced with frustration, despair and helplessness.

Physicians stepped up to provide space for patients to be ventilated inward. By the end of July, we had almost 170 patients either ventilated or on non-invasive ventilation. Oxygen supply became unstable and alarmed as the demand was too high. Coming to work was like going to a warzone with patients gasping silently while some refused intubation as they knew it would not end up well. Multiple lives were lost as we were just unable to cope.

Doctors were emotionally wrecked as we had to choose who LIVES and, what was even more heart-wrenching, who gets a ventilator or a high flow nasal cannula. Some of us were awakened by nightmares as we witnessed the demise of a relatively fit patient. Donations in the form of ventilators and HFNC did arrive later, but that did not guarantee good patient outcomes as there were inadequate ICU beds.

Then came a TSUNAMI of the pregnant. One or two critically ill pregnant patients is enough to wear one out, let alone 25 pregnant patients that we had in the ICUs at any given time. We had approximately 166 admissions of COVID maternity cases from June to August. Dealing with two lives is never easy in severe COVID. We began proning them, which was perceived as a relative contraindication for patients in the second trimester. As some patients continued to deteriorate despite multiple prone, what do you do next? The dilemma to continue or terminate a pregnancy during mid-trimester in deteriorating pneumonia is one that we constantly face. Premature neonates as tiny as 28 weeks would have a fighting chance to make it if delivered, all thanks to the exceptional neonatal service. Kudos to the ever-supportive obstetricians, and we managed to save most of the mothers with eight deaths (mortality rate 4.8%).

Simultaneously, we had a Multi-Resistant Organism (MRO) infection outbreak with this incredible surge of patients. Although avoidable, it was not unexpected, as we have untrained nurses taking care of patients in a ratio of 1:2 and overcrowded repurposed ICUs. Swift action was taken, and infection control measures were reinforced. However, despite our collective efforts, we still lost a high percentage of patients to these ruthless, unseen enemies.

At the Department of Anaesthesiology and Intensive Care Hospital Sungai Buloh, we have managed COVID patients solely for the past 19 months. We have lost the memory of the smell of Sevoflurane, the feel of the epidural 'give' and the simple joys an anaesthesiologist feels in an operation theatre. We fear we are losing touch with non-COVID management both in the ICU and in the operation theatre.

We are certainly proud of all our accomplishments over these many months, but we are only human. There will always be a breaking point, and in our case, many. Never would I have envisaged 2020/2021 to be so devastatingly ruined by a 0.1-micrometre particle. Our life plans have been put to a standstill with the economy ruined and humans being socially apart. We are a weary bunch of souls tired of donning, proning and moaning.

Thankfully, the numbers of severe COVID are decreasing because of the rampant vaccination programme. Most hospitals are seeing a dramatic reduction in cases, but we are still operating at more than twice our capacity. None can predict when the following Variant of Concern will come, but I believe and hope all of us in the fraternity will come together as ONE to fend off the next wave of COVID!

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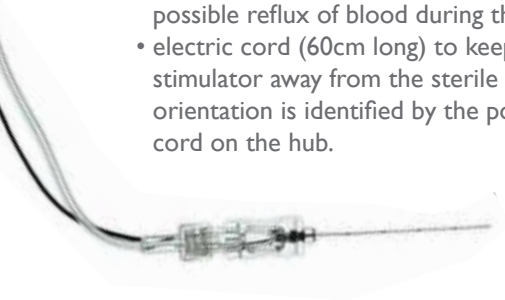

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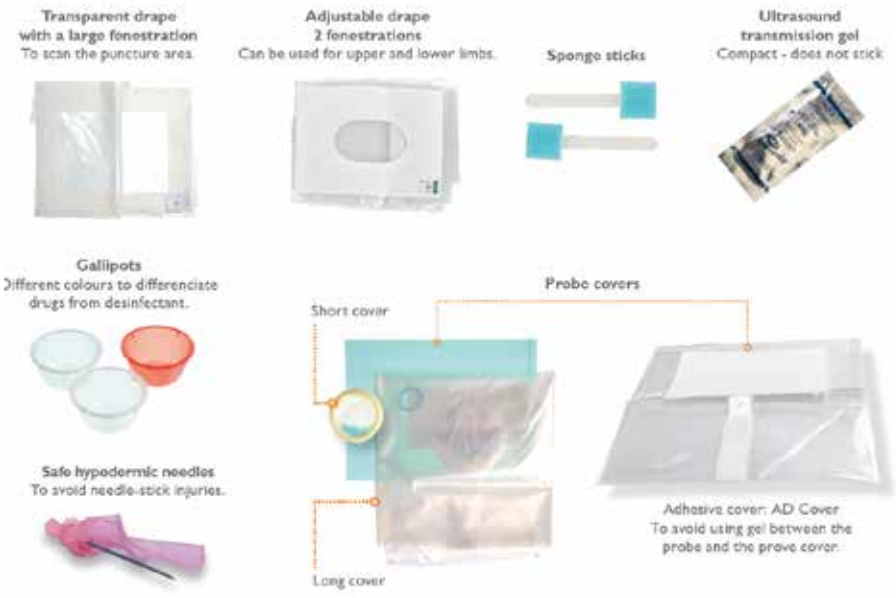

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ECMO in COVID-19 Patients, A Road Less Taken: The IJN Experience

by Dr Nadiah Kamaruzaman
Institut Jantung Negara

With the emergence of COVID-19, the world has changed overnight. Worldwide, we are faced with a both deadly and easily transmissible disease. Worse is, we are seeing how the disease has evolved, where novel variants behave differently. At the beginning of the pandemic, our number of cases and mortality rates were manageable. Contrarily, the situation has changed. Our health care system has been hit badly since the beginning of 2021 as we started having thousands of cases per day with a death toll of more than 200 daily. Despite taking appropriate measures to prevent its transmission and having more than 50% of the population fully vaccinated; death from severe COVID-19 infection seems inevitable, not only among the older people but also among the young ones.

For critical care physicians, managing Category 4 and 5 COVID-19 patients with Acute Respiratory Distress Syndrome (ARDS) would require significant effort. Mechanical ventilation has traditionally been used in ARDS. In difficult cases, high pressure ventilation is required to improve oxygenation. This may lead to ventilator induced lung injury, causing more harm than good. In combination with the disease progression of COVID-19 pneumonia, the injury may lead to permanent lung damage and futility of treatment.

Extracorporeal membrane oxygenation (ECMO) is a final alternative in the attempt to rescue these patients. Since the approval of the usage of ECMO in the sickest patients contracted with COVID-19 infection by FDA in April 2020, it has been accepted worldwide as an effective support in severe ARDS. ECMO works like a heart, pumping blood out of the body through a very large tube, called a cannula. The oxygenator works like the lungs, taking carbon dioxide out of the blood and adding oxygen to the blood. The oxygen-rich blood is pushed through a heater to warm the blood to body temperature before it is pumped back into the body through a return cannula.

There are two types of ECMO for different purposes. Venoarterial (VA) ECMO is meant for cardiorespiratory support in patients requiring heart and lung support; while venovenous (VV) ECMO is purely for respiratory failure. 92% of the total COVID-19 ECMO on the Extracorporeal Life Support Organization (ELSO) registry were on VV ECMO. How does this VV ECMO work? With VV ECMO, deoxygenated blood is drained from the patient's venous system (the drainage cannula is located in the inferior vena cava), passed through an external membrane gas exchanger (the oxygenator), and returned to the patient via the right atrium as oxygenated blood through a return cannula. This oxygenated blood mixes with the patient's systemic venous return and passes to the pulmonary circulation which later is distributed to the whole body via the left ventricle and aorta.

At the beginning of its use in ARDS caused by COVID-19, positive results were not many and the survival rates were low. In fact, a study in China has proven that ECMO worsened COVID-19 patients when they found that the amount of Interleukin-6 levels in 5 out of 6 patients were persistently high while on ECMO and had caused fatal outcomes. However, early data from the ELSO registry has shown that ECMO may be an appropriate strategy for severe ARDS in carefully selected patients with COVID-19 as they found 42% of the total number of patients who were on ECMO eventually was able to be discharged home. Their key opinion is to carefully select the patients.

Institut Jantung Negara is one of the few hospitals in Malaysia offering ECMO services nationwide. To date, we have instituted two ECMO in COVID-19 patients; both with different demographics but both were in their 20s. As patient selection was crucial, each case had an interdisciplinary discussion before a final decision was made to begin ECMO therapy. The meetings were held beforehand between the referring teams which consisted of the referring intensivists, and our esteemed ECMO team who consisted of cardiothoracic surgeons, intensivist, anaesthetists, perfusionists, respiratory physician, cardiologists and trained ECMO nurses. As resources are scarce, it is very important to ensure that all steps are carefully planned and carried out - from patient selection, patient preparation, safe transport to our hospital, preparation of the ECMO machine, care of the patients whilst on ECMO and ECMO termination.

First Case: VV ECMO 10th - 24th July 2021

Our first patient, a 26-year old lady, who was on day 4 of mechanical ventilation due to COVID-19 associated ARDS, had been referred to us for ECMO therapy after failing conventional treatment despite being placed in the prone position twice. She suffered from Grade 3 obesity, with a BMI of 54. We were initially skeptical regarding ECMO outcome given her obesity. However, from the ELSO registry, the prevalence of obesity in patients deployed with ECMO for COVID-19 ARDS was about 50%, and most have successfully recovered after ECMO therapy. Hence, we hoped that ECMO treatment would increase her chance of recovery. Apart from refractory respiratory failure, the patient did not have any evidence of other organ impairment. She was ventilated on a FiO2 of 0.9, with a PF ratio of 91, PEEP 14, compliance 21 ml/cmH20 and 3 quadrants of lung fields had infiltrates on Chest X-ray (CXR). Based on the Murray Score for ECMO, she absolutely was a candidate for ECMO therapy in ARDS. Being the first COVID-19 patient to be offered ECMO therapy in our institution, I would say that all our team members had mixed feelings between the excitement to run our new ECMO machine, the Cardiohelp System; and the worry of dealing with the sickest form of COVID-19. However, we were optimistic of a smooth process.

After being transferred to our centre, we quickly prepped her up for cannulation at the bedside in our intensive care unit. All the involved staff were in full personal protective equipment (PPE) during the ECMO deployment. Cannulation was via the percutaneous femoro-femoral approach. Given her morbid obesity, we expected a challenging cannulation procedure. Hence, both our cardiothoracic and vascular surgeons performed percutaneous cannulation via a Seldinger technique under ultrasound guidance. Cannula placement was confirmed by transesophageal echocardiography (TEE) - the return cannula in the RA and the tip of the drainage cannula within the IVC, just beyond the hepatic vein. To avoid recirculation, both of these cannulas were at least 10cm apart. As soon as the ECMO was instituted, the ventilation parameters were quickly reduced, to advocate the least-damaging mechanical ventilation with lower levels of pressure and tidal volume. This allowed the lungs to heal whilst on ECMO. The patient was commenced on anticoagulation with Heparin intravenous infusion. Given the prothrombotic state of COVID-19 patients, initially, we kept a higher target activated clotting time (ACT) between 180 and 200 in this patient. However, we had some initial bleeding from cannulation sites, hence we had to revise the target ACT to about 150. After stabilization, the patient also received steroids, antibiotics, ventilator recruitment and other supportive treatments.

Miraculously after about a week on ECMO, we saw great improvements in terms of her oxygenation levels, improved radiographic appearances, and overall condition. We were heading towards weaning her off of ECMO in the second week when she suddenly developed neurological symptoms. She had unilateral pupillary changes with diplopia and drooping of the eyelid and was then referred to the Ophthalmology team. Their impression was the sixth nerve palsy and suggested brain imaging. Since she was dependent on the ECMO machine, it was unanimously decided that she could not be safely transferred for a CT scan. Satisfied with her improvement in the eye symptoms, on top of improvement of her lungs, the decision to liberate her from ECMO was pursued. Decannulation was done on 24th July, day 15 of ECMO and the patient continued to have good oxygenation with minimal settings on the ventilator. Unfortunately the following day, her neurological function further declined. As she was no longer on ECMO, she was sent for an urgent CT scan of the brain. The scan showed a massive intracerebral hemorrhage with an extension to the brainstem. An urgent referral to the neurosurgical team was made. Brainstem test was positive for brainstem death. She then succumbed on 29th July 2021. Perhaps, that minor eye symptom was an initial sign of a massive intracerebral bleed.

Second Case: VV ECMO 4th - 17th August 2021

Our second case was referred from another hospital also overwhelmed with COVID-19 patients. This time, it was a 22-year-old male, who only received his first vaccine dose before contracting the illness. He presented to the hospital on his fifth day of illness, in Category 5 with severe ARDS, needing mechanical ventilation soon after admission. He had failed conventional treatment including prone ventilation, hence was referred for ECMO therapy. Despite the loss of our first patient, we were hopeful that we would succeed this time.

Similar to the first case, we used the Cardiohelp System to establish VV ECMO via peripheral cannulations, femoro-femoral access. The cannulas placement was also confirmed with the TEE. Despite placing the return cannula in the RA, and the drainage cannula in the IVC, we were faced with recirculation issues. Recirculation occurs when oxygenated blood from the return cannula is entrained into the drainage cannula, bypassing the lungs, and resulting in arterial hypoxaemia. There are a few possible causes. First, when both cannulas are not adequately separated from each other; second, when the ECMO circuit flow is too high; and third in case of low cardiac output or low intravascular volume. How did we handle this issue? By excluding number two and

optimizing number three, we acknowledged the suboptimal position of both cannulas as the cause of this. In this scenario, the drainage cannula was withdrawn slightly. We also advanced the return cannula deeper to achieve more optimum placement so blood flow was directed towards the tricuspid valve. We have already used the longest return cannula available and placed it at the maximum allowable level by the manufacturing instructions. By repositioning the cannulas, recirculation of the ECMO circuit was significantly reduced.

In the first week of ECMO, we managed to only see a slight improvement in terms of oxygenation, CXR images and inflammatory markers. However, we were faced with bleeding complications secondary to the anticoagulation. He not only developed bleeding from the cannulation sites, but also the oral cavities and invasive line puncture sites. We had to reduce the target ACT, and thus revise the heparin dose to lessen this problem. He also developed right lower limb swelling which was probably caused by an obstruction to the local venous drainage of that limb. A bedside ultrasound excluded deep vein thrombosis. However, we were concerned and tried our very best to wean him off of ECMO. With the help of the visiting Infectious Disease physician, we managed his antibiotics as well as steroids therapy appropriately. Despite that, he developed a superimposed infection with the multi-resistant organism Acinetobacter Baumannii. Again, the antibiotic course was changed, but this time specifically targeting this organism. Now, we could only pray that recovery belonged to him. Despite these challenges, the goal was to wean him off ECMO at the earliest opportunity. The question was, was he ready to be liberated?

A simple test to assess his readiness was to turn off the fresh gas flow (sweep gas) on the oxygenator. This meant that all the gas exchange would have to be done by his native lungs. The first day doing that, he could sustain with good parameters for five hours before getting exhausted. Before attempting the test again, we added nitrous oxide to improve the existing ventilation-perfusion mismatch. The second time, he did better with more than eight hours without sweep gas running on ECMO. Satisfactory lung compliance, which was estimated from good tidal volume and normal airway pressure on the ventilator was observed. Everything seemed alright. The team was ready to decannulate the ECMO circuit from the patient. After liberation from ECMO, given dissatisfying and persistent left lung changes on the CXR, bronchoscopy was performed in the patient. To our surprise, not much secretions were present. Generally, it was only hyperemic bronchial mucosa with patches of what looked like petechiae on the mucosa.

Two days after liberation from ECMO, his oxygenation turned poor. Now the strategy was to optimize the ventilator parameters with higher PEEP and perform lung recruitments. We proceeded with prone ventilation for 16 hours and he remained well for another two days. Unfortunately, his oxygenation issues returned. Struggling with high ventilator parameters, we finally managed to send him for HRCT of the thorax, to aid us in prognosticating his condition. The findings were dreadful, with bilateral lungs involvement, ground-glass opacities, signs of organising pneumonia and likely fibrosis, as well as a small rim of pneumothorax on both sides. By then, his ventilator settings were rather high to be able to maintain decent oxygenation. The night he deteriorated, I was the anaesthetist-on-call. Initially, he was having high airway pressures between 45-51cmH20; it must have been the pneumothorax that had gotten worse. Consequently, chest drains were inserted in an attempt to expand the remaining lung parenchyma, yet, the lung compliance remained poor. We placed him in the prone position, hoping to improve the distribution of perfusion and ventilation; but it only lasted for an hour as he became more unstable. The oxygenation continued to worsen. I witnessed him deteriorating in front of my eyes after all measures taken failed. Cardiopulmonary resuscitation (CPR) was commenced after he went into asystole, and we managed to get return of spontaneous circulation after two cycles of CPR. However, things continued to deteriorate and we discussed with the family regarding consent for a Do-Not-Resuscitate order. He lost the battle that night. Again, we lost another young patient to COVID-19.

When will this pandemic end? When can we return to 'normal' life? What is the 'normal' life? Some say, this is our new norm. ECMO has thus far been proven to be beneficial in COVID-19 patients. It takes a committed team to manage the patients on ECMO. All the steps are extremely important; from the decision on who should be on ECMO, to the management, till the liberation from ECMO. Instituting ECMO should be for everyone's benefit; from the patient, the institution and the nation, despite the many challenges we face, not to mention limited resources. Yes, this is not an easy battle to fight entirely. To all the frontliners out there, you are the unsung heroes of this nation. Those ill patients require our great care. We have made it this far. Giving up is not in our vocabulary, my comrades! The light will eventually shine at the end of the tunnel, and we shall all dance our way out of the darkness.

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INDICATIONS Reversal of neuromuscular blockade induced by rocuronium or vecuronium. For the pediatric population: BRIDION® is only recommended for routine reversal of rocuronium induced blockade in children and adolescents. **DOSAGE AND ADMINISTRATION** BRIDION® should only be administered by, or under supervision of an anesthetist. The use of an appropriate neuromuscular monitoring technique is recommended to monitor the recovery of neuromuscular blockade. The recommended dose to be administered depends on the level of neuromuscular blockade to be reversed. **CONTRAINDICATIONS** Hypersensitivity to the active substance or to any of the excipients. **WARNINGS AND PRECAUTIONS** • Ventilatory support is mandatory for patients until adequate spontaneous respiration is restored following reversal of neuromuscular blockade. Ventilatory support is also required in cases where co-administration of drugs which depress respiratory function in peri- and postoperative period. • BRIDION® (doses of 4 mg/kg and 16 mg/kg) resulted in maximum mean prolongations of aPTT and of PT (INR) prolongations. However, it did not show an increase bleeding risk when comparing BRIDION® versus placebo in patients treated with anticoagulant. • Based on in-vitro experiments, additional aPTT and PT prolongation has been reported in BRIDION® with anticoagulants. • Bleeding risk has not been studied systematically at higher doses than 4 mg/kg, thus, coagulation parameters should be carefully monitored particularly in patients with known coagulopathies or those who receive high dose of BRIDION® (16 mg/kg). • It is not recommended to administer doses lower than the therapeutic doses due to reported increased incidence of recurrence neuromuscular blockade after initial reversal. • When rocuronium 1.2 mg/kg is administered within 30 minutes after reversal with BRIDION®, the onset of neuromuscular blockade may be delayed up to approximately 4 minutes and the duration of neuromuscular blockade may be shortened up to approximately 15 minutes. • The recommended waiting time in patients with mild or moderate renal impairment for re-use of 0.6 mg/kg rocuronium or 0.1 mg/kg vecuronium after routine reversal with BRIDION® should be 24 hours. • A nonsteroidal neuromuscular blocking agent should be used for patients requiring neuromuscular blockade prior to passing the recommended waiting time. • BRIDION® is not recommended in patients with severe renal impairment, including those requiring dialysis. **ADVERSE EVENTS** In the subset of Pooled Placebo-controlled trials where subjects received anesthesia and/or neuromuscular blocking agents, the following adverse events occurred in 2% of subjects treated with BRIDION® and at least twice as often compared to placebo including airway complications of anesthesia, coughing, tachycardia, bradycardia, movement of a limb or the body, grimacing or suckling on the endotracheal tube. For additional adverse experience information, see the product circular.

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Patient's Concern with PONV

Postoperative nausea and vomiting (PONV) is one of the **most unpleasant experiences** during the postoperative period, and has **significant consequences for patient satisfaction, patient outcomes and costs of care.**[1,2]

49%	**PONV**
27%	Pain
13%	Alertness
11%	Additional costs

220 GA surgery patients who were asked to rate their concerns during immediate postoperative recovery ranked the relative importance of the 4 factors as above[3]

GA = General Anesthesia

Images are for illustrative purposes only.

In contrast to acetylcholine esterase inhibitors, the muscarinic effect of sugammadex is limited.[4]

Why Anti Muscarinic may Increase the Incidence of PONV?

Cholinesterase inhibitors can cause vomiting and diarrhea by stimulating muscarinic receptors that increase motility and secretions in the esophagus, stomach, and small and large intestine.[5]

Latest Update!!

2020 Fourth Consensus Guidelines for the Management of PONV[6]

This set of guidelines have been officially endorsed by the Malaysian Society of Anesthesiologists

Strategies to Reduce Baseline Risk

- Avoidance of GA by the use of regional anesthesia (A1)
- Use of propofol for induction and maintenance of anesthesia (A1)
- Avoidance of nitrous oxide in surgeries lasting over 1 h (A1)
- Avoidance of volatile anesthetics (A2)
- Minimization of intraoperative (A2) and postoperative opioids (A1)
- Adequate hydration (A1)

Using sugammadex instead of neostigmine for the reversal of neuromuscular blockade (A1)

Quality of Clinical Evidence
Category A: Supportive literature. Statistical significance level was set at $P < 0.05$. (A1)The literature contains multiple randomized controlled trials, and aggregated findings are supported by meta-analysis. (A2)The literature contains multiple randomized controlled trials, but the number of studies is insufficient to conduct a viable meta-analysis for the purpose of these guidelines.

PONV = Post-Operative Nausea and Vomiting; NMB = Neuromuscular Blockade; PTCs = Post Tetanic Counts; TOF= Train of Four; GA = General Anesthesia

Disclaimer : "Sugammadex is not an anti-emetic drug and has no indication for PONV"

STUDY DESIGN L H J Eberhart et al.[3] This survey evaluates patients' concerns and preferences with respect to postoperative recovery. Total of 250 consecutive patients (56% females; median age 48 (range16-76) yr) undergoing orthopaedic (48%), gynaecological (28%), urological (10%), or minor general surgical procedures (14%) performed under general anaesthesia were asked to rate nine scenarios during immediate postoperative recovery based on four factors (alertness, pain, postoperative nausea and vomiting (PONV), and extra costs) each with three levels. 30 were unable to complete the survery, and the remaining 220 patients was analysed. Different methodologies have been used, including traditional face to face or paper-based interviews, willingness to pay, or rating of virtual scenarios. The relative impact of each factor on ranking the scenarios was assessed by using conjoint analysis.

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MSD

Transformation of HPKK to a COVID-19 Hospital: More Than Meets The Eye

by Dr Tan Ru Yi
Hospital Putrajaya

When I volunteered to be in the frontlines once again in the Klang Valley just after a two-year stint in Sarawak fighting COVID-19 across the South China Sea, never in a million years did I imagine that I would be in for a ride of my life.

I was expecting to be deployed to Hospital Sungai Buloh when fate decided otherwise. To my surprise, the deployment letter stated that I was supposed to report to HPKK UKM (Hospital Pakar Kanak-Kanak Universiti Kebangsaan Malaysia) instead.

Before this, I never even knew this hospital existed. When my consultant informed me that I would be the acting consultant running the COVID ICU in that place as my other colleagues would be mainly to be gazetted or junior specialists, I brushed it aside thinking that she must be joking, little did I know it was going to be true.

Since 22nd May 2021, to prevent the healthcare system from collapsing under the brunt of the pandemic, the Health Director-General Tan Sri Dato' Seri Dr Noor Hisham Abdullah announced that HPKK was to be temporarily converted into a COVID-19 hospital under the Emergency Ordinance (Essential Power) 2021 at the behest of our then Prime Minister YB Tan Sri Muhyiddin Yassin. Through this Ordinance, the Health Ministry had the power to temporarily take over HPKK UKM and other resources including human resource for the purpose of managing the surge of the COVID-19 pandemic. It was one of the first few non-MOH facilities around the country repurposed under the Emergency Ordinance to accommodate intensive care COVID-19 cases.

This new hospital had the capacity of 243 beds including existing 28 gazetted critical care/ICU beds with the potential to expand further to a total of 46 critical care beds. It was equipped with a state-of-the art electronic hospital management system. The plans came to fruition when the process of conversion into a full COVID-19 hospital started on 1st June 2021. When I reported for duty to HPKK in early June, I was mentally prepared to hit the ground running and fire on all cylinders, but to my surprise it was a new hospital that was not operational yet even more so able to manage critically ill COVID-19 patients. It hit me right there and then that it was a do-or-die mission and the burden of responsibility weighed heavily on our shoulders.

Being the pioneering batch of KKM specialists in this place, we had the gargantuan and difficult task of not only managing the COVID ICU but also to set it up and get it running within an extremely short time. Despite much adversity and being thrust into the limelight due to visits by the Prime Minister, Director-General of Health and other KKM VIPs, our galvanised efforts came to realization when HPKK finally opened its doors on 17th June to COVID-19 patients. As the saying goes, Rome was not built in one day, in this case the COVID ICU and wards were literally set up in a short period of 16 days. I believe that most anaesthesiologists/intensivists would attest that the Masters training programme did not prepare us for this. We had to learn fast on the job. Most of the planning had to be done from the ground up.

Unlike most established hospitals in the Klang Valley which ran like a well-oiled machine, we were faced with numerous daunting issues which included lack of trained

and senior staff, problems of converting a partially equipped Paediatric ICU into an adult ICU i.e., ICU beds were smaller in size, mattresses were thinner, no HD facility, no appropriate medications, no consumables especially adult sized ones like ventilator circuits, HMEs, adult BP cuff, no adult blood specimen bottles, IV cannulas, the list went on and on. We had to painstakingly vet through a long list of at least 800 items including essential equipment to request and procure. In other words, even trivial things that we took for granted in KKM hospitals were severely lacking.

We practically had meetings after meetings daily with staff, vendors, and everyone else involved, sometimes way past office hours into the night to discuss and plan on various aspects e.g., budget planning and getting quotations, ICU and Ward set up, equipment and medication procurement, etc. Even the minutest details had to be planned and thought through e.g. floor plans, fire exit and evacuation plans, cordoning and zoning of areas, rostering, manpower distribution, staffing ratios etc. In the beginning, we had to beg and borrow equipment, consumables, and medication from other hospitals around the Klang Valley just to kickstart as supplies had not arrived due to various reasons. In desperation, we even had to transport HD machines and portable RO machines from HKL in a "van jenazah" and medications using our personal vehicles. Fortunately, Dr Melor Mansor (Ex-National Head of Service for Anaesthesia and Critical Care Services) and Dr Zalina Abdul Razak (current National Head of Service) were very supportive of our efforts and helped us throughout as much as they could in many aspects.

During the initial operational stage, we also had daily passover meetings with Dr Melor Mansor via teleconferencing to discuss cases and got his advice on urgent issues until we were able to stand on our own feet. Mercy Malaysia was in the picture from the start. In collaboration with them, we managed to organise orientation and training programmes on the basics of COVID-19 management to the newly deployed staff. Besides that, the NGO also donated some essential consumables and equipment such as HFNC to us.

HPKK was unique in the sense that it would function like a field hospital but with the trappings of a luxurious shell (meaning the hospital was equipped with modern infrastructure but were lacking in major clinical disciplines). Furthermore, it was not an empty canvas that we could do anything with. We had to manoeuvre our way and tread carefully through bureaucracy and red tape because we were in a way serving two masters at the same time (KKM/JKWPKL and HPKK/KPT).

I must admit that my hair had just become a shade greyer, because of juggling between administrative issues and clinical management of patients, working without breaks or leave, sometimes even going to work on weekends when not on call; not to mention the countless emergency meetings (sometimes until night) with the HPKK admin team or various other parties regardless of the time and day. With the COVID-19 cases rising to unprecedented levels, we were pressured to open our doors as soon as possible. Time was our enemy, we planned, prepared, and trained as much as we could. Despite various shortcomings, we simply took the leap of faith and, finally, on 17th June 2021, HPKK opened its doors to its first COVID-19 patients. It was a bumpy ride from the start, some problems we were able to anticipate but some took us completely off guard. We learned, adapted, innovated, and put out fires as we went along. When the going got tough, the tough got going. As forewarned by Dr Melor, once we opened the floodgates, there was no turning back. True enough, many things did not go according to plan; the ICU bed occupancy increased drastically with each passing day. Before we knew it, the numbers bloated up to 31 beds, we were at the point of reaching our limits in terms of workload, supplies and manpower when reinforcements finally trickled in. At the start, the primary source of our referrals was from MAEPs via the Central Bed Management Unit. In the later half, we received referrals from all hospitals in the Klang Valley. Our daily admissions only consisted of Category 4b (high risk of further deterioration) and Category 5 patients. From the get-go, clinical teams in HPKK comprised the ICU team and general medical team. We did not have the luxury of support from other clinical or surgical disciplines. Any surgical related issues requiring surgery had to be outsourced elsewhere and we had to cross our fingers many times that it would not

have to come to that. Referrals to other teams were mostly to Hospital Canselor Tuanku Muhriz (HCTM) of which logistics were a major challenge.

By 8th July, nearing the height of the COVID-19 pandemic, the Greater Klang Valley Special Task Force (GKVSTF) was set up and given the mandate by our Prime Minister through the Health Minister to bolster the health care system which was already at the brink of collapse. It was spearheaded by the Deputy Health Director-General, Dr Chong Chee Keong and included personnel from the Armed Forces. Its purpose was to make swift decisions at ground level to alleviate stress on the Klang Valley hospitals. This included the procurement of equipment and mobilization of resources such as manpower, oxygen supply, and intensive care (ICU) beds. With the help of this task force, the emergency team from KKM came into the picture, they opened more beds in the lobby and Emergency Department of HPKK which functioned like a mini MAEPs to either assist in decongesting overcrowded Emergency Departments all over the Klang Valley that had many stranded COVID-19 patients needing urgent treatment especially from Hospital Tengku Ampuan Rahimah, Klang or to take in step down patients from our critical care beds upstairs. Some of the patients brought over from the Emergency Departments who had deteriorated were subsequently brought upstairs to our critical care beds for escalation of treatment. Indirectly, we were helping to reduce the burden of ICU referrals to these other hospitals.

Besides managing COVID ICU patients, our team also organised weekly CME and teaching sessions for the medical officers and housemen. Bedside hands-on teaching was also conducted frequently. We even had weekly radio-clinical conferences and MDT discussions with consultants from HCTM, IPR and HKL on a regular basis. It was a great challenge daily to keep the ICU running and staying afloat as we always had recurring issues of manpower, equipment, medications, and consumables shortage. However, working with a smaller and younger team meant it was easier and faster to execute plans because there was less interference from politics and without little napoleons running the show. All of us were on the same page from the beginning. We worked hand-in-hand with the pharmacists, physiotherapists, dieticians, lab pathologists, radiologists, mortuary staff and others. Everyone's input and contribution were greatly appreciated. In fact, we were very touched that the pharmacists went the extra mile by driving up to hospitals in other states to procure or barter drugs for us. The physiotherapists were also excellent in their work as they came daily and even on weekends to help rehabilitate our patients. The ICU medical assistants always ensured the PAPRs and other equipment were thoroughly cleaned, checked and available when we needed them. These were just some examples of the many commendable and outstanding work the team in HPKK did for us.

Majority of the staff (nurses and medical assistants) deployed were young and inexperienced in the Covid battlefield, many of them were fresh out of college or from the PKD. Compounding to that, the bulk of deployed Medical Officers were also just out of housemanship and were still wet behind their ears. They were thrown into the deep end by having to work in the ICU, it was either sink or swim for them. However, what they lacked in experience and skill, they made up for in enthusiasm and teachability. We were amazed at how they showed tremendous resilience, courage, strength, and eagerness to learn. Despite some being unable to handle the stress and long working hours in suffocating PPEs and subsequently had to be transferred to less labour-intensive work in the wards, most of them managed to overcome the steep learning curves and high intensity work required of them in a short period of time. In the initial stages of HPKK operations, we had the help of a small handful of postgraduate students to lead and guide the junior MOs but they eventually went back to their respective hospitals. The high staff turnover was also a frustrating problem. Staff that we painstakingly trained over a period of a few weeks to a month were being pulled back to their respective hospitals and replaced with new inexperienced staff and we had to start from square one.

As in any war, there were casualties but there were also many lives that we were able to snatch from the clutches of death. We had the privilege to care for parents of our staff who were stricken with COVID too. By the grace of God, many were successfully discharged and went home. Throughout, we were able to see many being reunited with their loved ones. It was a thankless job, but this was the greatest satisfaction and everlasting reward that we as healthcare workers could ever ask for.

Despite what seemed to be a despairing situation, we were blessed to receive some help along the way. Dr Foong Kit Weng (Intensivist from Hospital Raja Permaisuri Bainun, Ipoh) came to HPKK about three weeks after its opening. Albeit he was around for a short period of 10

days, we managed to pick his brain and draw from his wealth of experience and expertise to make many improvements in terms of managing and streamlining the ICU. We were also mesmerized by his unassuming demeanour and willingness to teach. His lessons were always so enlightening and insightful. We were also glad to have Dr Azizol Mohamad (Head of Department of Anaesthesia Department, Hospital Kuala Krai, Kelantan) who came to give us a helping hand for a whole month. He was a humble and generous senior, who walked the talk; he did daily rounds in the ICU with us and did on-call without complaining or pulling rank. There were also two senior consultant anaesthetists from the private sector who came to assist on a pro bono basis, Dr Seah Keh Seng and Dr Jude Morgan who sacrificed their time and money to ensure our welfare and safety were well taken care of. They used their network of contacts to help get us donations for better PPEs, N95 masks, electronics, etc. They donned up like the rest of us and entered the COVID ICU many a time to help manage difficult patients. We were also grateful to Dr Syarifah Noor Nazihah binti Sayed Masri (one of the lecturers from HCTM) who took time out of her busy schedule to volunteer in the ICU especially at time when we were short staffed.

Although there were many hiccups along our journey, we were fortunate to receive continuous support of everyone involved including from HPKK, JKWPKL, KKM, HCTM, GKVSTF, Mercy Malaysia, and numerous other parties from the private sector and NGOs. Because of their concerted effort we managed to enter the fray just in time fighting along bigger hospitals resisting the COVID-19 onslaught. At the height of operations, bed occupancy was at 177 beds, this included 31 mechanically ventilated patients, 56 patients on HFNC in the gazetted and repurposed ICU and approximately 75 patients in the wards. Plans were already in place to expand our capacity to 46 ICU beds in anticipation of a further surge in cases, but as we were gearing up to do so, the COVID-19 situation in the Klang Valley had begun to improve due to aggressive vaccination efforts, hence we were ordered to stand down. Eventually, a total of 842 Category 4b and Category 5 COVID patients have walked through its doors. Now that we are seeing some light at the end of the tunnel, we are grateful to be given the opportunity to make a positive impact in the fight against the COVID-19 pandemic in the Greater Klang Valley. I believe it was no meagre feat given the circumstances that we were in. Nevertheless, we do not want to rest on our laurels just yet as we need to be constantly vigilant of the enemy who is lurking in the shadows bidding its time to strike again. In other words, the war is not over, and we are in it for the long haul.

With this, I would like to extend and express my gratitude to everyone working in HPKK for making this endeavour a success. You are all champions in my eyes. A big thank you especially to the HPKK staff led by Professor Dr Syed Zulkifli (HPKK Hospital Director) and Deputy Directors: Professor Dr Tang Swee Fong, Professor Dr Hamzaini Abdul Hamid, Associate Professor Dr Abdul Halim Abd Rashid for affording us your trust, warm hospitality, and cooperation throughout this crisis. Kudos to everyone who worked in the COVID ICU from doctors and nurses to ancillary staff for without which it would not have been possible to achieve these. Special mention goes to the core team of specialists whom we started this place together: Dr Zahrin bin Ma'Zam, Dr Siew Gee Ho, Dr Faiz bin Rusli and Dr Billy Voon Wei Loong. It is not possible to list out each and everyone else in this article, but you know who you are.

Personally, I have learnt a lot from this once in a lifetime experience especially the soft skills such as having greater patience and humility, better interpersonal skills, putting one's ego down and willing to relinquish roles and delegating responsibility besides not attempting to micromanage everything.

At the time of writing, HPKK is in the soft-landing phase, gradually winding up as a COVID hospital and being transformed into a paediatric specialist hospital as it was originally built for. Most of the KKM staff have already been redeployed elsewhere or returned to their respective hospitals. On one hand, it was sad to see people whom we have gone through thick and thin say their goodbyes, but on the other hand it is a promising sign that we may get back to our normal lives soon. I believe that with the experience, knowledge and expertise gained, camaraderie and bonds forged throughout our stint in HPKK, we will emerge stronger and better wherever life leads us next. Keep up the good work! Do take care and stay safe!

"Every Experience is orchestrated to teach you something you need to know to move forward." Brian Tracy

A Day in the Life…in a COVID ICU

by Dr Ivy Sim Chui Geok
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A doctor hurries into the hospital from the wide expanse of the Hospital Sungai Buloh staff carpark, feeling triumphant at finding parking close enough to the lifts to ensure minimal walking required and thinks hopefully… please do not let there be an intubation today.

After reaching the hallowed 3rd floor where the ICUs are housed and were recently proliferating, doctors squint at the wall with a sea of yellow cards until they find the correct one with their name on it and punch-in with an old-style clock-in device, thanking the powers that be that they made it before the stroke of 08:00.

At the infamous 'Oncall Complex', the daily bustle begins with the jostling for scrubs and after hunting high and low, and sometimes sneakily pilfering from the nurses' pile…we rejoice in an attire which is neither the correct size, a flattering colour (bright orange), or of matching tops and bottoms.

We patiently wait for everyone to assemble for handover, some stragglers smiling sheepishly as they slide into a chair conspicuously. Listening to the drone of the patient's age, co-mobidities, day of illness, some proceed to fall sleep till jolted awake by…"man…look at that chest X-ray" as if it were the scene of a gruesome car crash or feel a chill down the spine when someone announces…"blood cultures are growing gram negative rods". Then, as the doze continues through admission-transfer out, intubation-extubation and the manoeuvre prone-supine, we are vaguely reminded of our favourite roti canai being tossed back and forth and start to wonder…"when can we get to breakfast!"

Run through the daily checklist - personal items stored away, mobile phones wrapped up tightly, tummies full and bladders empty, one by one we head to the respective ICUs, passing by others slowly munching on breakfast in the corridors and grinning toothily back (a rare sighting of a smile without a face mask).

Lets go to the ICU!

At the threshold, we carefully put on an N95 mask and then don the rest of the 'costume' of full PPE. Indeed the end result is a sight to behold, covered from head to toe in fluid-repellant material with only pairs of eyes peering out from behind plastic face shields. We look like the PPE-teletubbies and it is amazing how we can even tell each other apart.

The doctors cross the threshold with a welcoming gush of air from the negative pressure anteroom with their phones safely in their clutches holding important information on jobs for the day.

We approach our first patient, one who is playing a game of tug-of-war with the ventilator. A minor adjustment later, he breathes comfortably and settles into the cross legged stance that everybody knows is the soft clinical sign indicating 'ready to be extubated'.

The next patient is one who is intubated and in the prone position. A doctor tries to imagine if it would be comfortable in that position and ponder if he could sleep in this position for 16 hours. We make sure that every body part is not overstretched, padded and out-of-harm way and at the same time mentally calculate the number of staff that will be required to turn the patient to the upright position, before moving on.

There is a flurry of activity at another end of the ICU where a proning is imminent. The patient has every pressure point imaginable covered in pressure dressings by a group of nurses, with a few more for good measure. When the patient is deemed suitably 'padded', a nurse hurries along and 'lassoes' one of the doctors from the ward round herd to co-ordinate the manoeuvre. As the team assembles around the patient, someone realises… "oops, the patient is at least 150kg". Nurses are, in general, lean and mean, and this particular patient will require a few more bodies to shift. A few more doctors and nurses arrive. Another voice says, "oh wait don't forget to lift the urine bag" and yet another "for goodness sake be careful

with the art line…it took 2 hours to get!". A couple of minutes later the patient is finally face down and everyone watches the oxygen saturation climb from 86 to 95 to 98 to 100% and there is a collective smile…now that was totally worth it.

Meanwhile, a patient sitting in a bedside chair watches his own saturation monitor while contemplating life outside the ICU. The doctors note the low grade temperature and increasing numbers marching across the serial investigation chart and wonder the age old question…"is it sepsis?"

Further along the ICU, a huddle of doctors scrutinise a chest X-ray and wonder where on earth did the nasogastric tube that they saw just a minute ago snake its way to? A few more minutes of contemplating whether a new pair of glasses were in order and a few contrast changes later…it magically appears. There it is…!

Somebody bellows…"Transfer OUUUT!". The patient heaves a sigh of relief, nurses and doctors rejoice and the ward staff arrive with a bed like busboys a few moments later to ferry the patient to the ward. The patient waves goodbye. The ICU staff wave back thinking…please do not come back.

A young doctor walks up to another patient who is intubated and enthusiastically asks, "what's your name sir?". The patient unable to respond turns to the nurse and shrugs. The nurse pats the patient's hand, nods understandingly and turns to tell the doctor…"Sorry, he can't chat at the moment…".

A bit of a morning lull sets in during rounds until the Intensivist is suddenly spotted hovering over a patient and naturally, a crowd gathers and rounds truly get going. Steroids and antibiotics get tossed around and the parade follows all around the ICU.

We examine, adjust ventilators, look at investigation charts, gaze at X-rays and medication charts. Rinse and repeat the process multiplied by the number of patients until we finally reach a group of patients that we have been leaving for last or have been intentionally 'avoiding'.

These patients are sequestered into isolation rooms or strategically grouped together. The infected within the infected of the COVID ICU, we have reached the 'MRO crowd'. An invisible line is drawn all around them with a sign that says metaphorically, "Keep out and obey all contact precautions or will be eaten alive by angry nurses or Intensivists, whoever is closer".

As if on que, the lab calls and after a suitable pause for effect, announces, "it's MRO". The unfortunate patient is swiftly plucked out of the masses and deposited into his cubbyholes to prevent the contagion from spreading. The lab calls again…"it's CRE". This time the threat level rises from catastrophic to apocalyptic. It is time for the big guns, the big antibiotic guns that is. We lock everything down and do some contact tracing within the ICU to reign in any possible CRE-hitchhikers on the loose. Nobody gets in and nobody gets out.

Some patients are not doing well, some are cruising along and some are ready to go to the wards but the round ends finally with a master plan set for the day.

Bladders full, stomachs empty and minds churning…the group scrambles out of the ICU. As we head for the showers, someone spots a pile of actual towels lying innocently unattended. Everyone pounces on these and congratulate himself/herself on an excellent find. Emerging suitably cleansed and ready for handover, we walk towards the sun and think…thank goodness for 'PM'.

GLOSSARY

Art line	Arterial line
MRO	Multi-drug resistant organisms
CRE	Carbapenem resistant enterococci
PM	The afternoon shift

History of Anaesthesiology in Malaysia

17th World Congress of Anaesthesiologists - Global Anaesthesia Village, 2021

by Dato' Dr Yong Chow Yen[1] & Professor Dato' Dr Patrick S K Tan[2]
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TWO ANAESTHETICS. MALACCA AND PENANG, 1847

Today, real-time demonstrations of anaesthesia can be witnessed or viewed anywhere within the radius of information technology, just like our participation in WCA 2021 from the comfort of our home countries. In the era of COVID-19 pandemic, information technology is emerging as the most powerful educational tool available to ensure continuing progress and learning in anaesthesiology and critical care medicine.

However, 175 years ago, at the time of the first demonstration of ether anaesthesia by William T G Morton for surgery by John Collins Warren in the Massachusetts General Hospital on 16th October 1846, the news and medical scientific reports of this event reached London only one or two months later and Malaysia five months later. Dr Francis Boott, an American physician and botanist who practised medicine in London, wrote to Lancet in 1846 to inform his colleagues about ether anaesthesia when he heard it from his friend John Bigelow, thus ensuring the medical scientific community throughout Britain, Europe and the countries linked to the British colonial administration received the news.

British newspapers of January 1847, carrying news of the first anaesthetics in England on 19th and 21st December 1846, were transported on the P&O steamship *Hindostan*, which departed Suez 15th February 1847 and reached Galle Sri Lanka. These papers were transferred to the steamship *Braganza* which left Galle 4th March and reached Penang 12th March 1847. The *Penang Gazette and Straits Chronicle* reported the London anaesthetics on 20th March 1847. This led to the first anaesthetic in Malaysia by Dr Ratton in Melaka, previously known as Malacca, on 28th April 1847 which was reported in the *Singapore Free Press* on 30th April 1847. The account of the first anaesthetic in Malaysia is transcribed below, from microfilm archives in the National Library Singapore.

"I have the pleasure to forward you the following brief particulars of an operation I performed at this Station on the 28th instant, the patient being previously placed under the influence of sulphuric ether and thereby rendered perfectly insensible to pain or the steps of the operation. The present case being perhaps the first serious operation performed in the Straits in connection with the inhalation of ether. The man, a Malays, a lascar on board the Topay Sri Melaka, had his right hand blown away from a gun on the morning of the 28th instant. The bones of the forearm being also extensively fractured, and the parts otherwise injured, circumstances which call for an amputation below the elbow. He was at first put under the influence of ether by inhaling the vapour from a simple Mudges inhaler attached to the hospital (containing small pieces of sponge saturated with the ether), common care only being taken by compressing the nostrils during the act of inspiration and making the mouthpiece pass through a piece of sponge to secure its full inhalation into the lungs. This was effected in about four minutes when his eyes being closed, his head sank upon his chest in an apparent state of insensibility; the operation was now immediately commenced by the flap operation. The man at the moment of transfixation by the knife merely exclaimed "what are you doing to me?" when he relapsed into his comatose state and though he moaned twice remained in this state of insensibility and unconsciousness during the operation, and after the steps of tying the arteries, securing the flaps by sutures and removal to bed. And in this quiet somnolent state I left him, breathing naturally with a quiet natural pulse of 80. When seen three hours afterwards and questioned relative to the operation, he stated that he was aware of my intention to remove his arm, but of the operation itself, pain or of any of the circumstances connected with it, he was perfectly unconscious. The haemorrhage, it may be remarked, was unusually trifling. The man is going on very favourably."

Two months later, the *Penang Gazette* reported another anaesthetic and surgical success on 3rd July 1847:

The inhalation of the vapour of sulphuric ether combined with atmospheric air was tried on Tuesday last by Mr Smith, surgeon, in the presence of several other persons, upon a patient from whom he removed a fibro-cartilaginous tumour and proved completely successful in rendering the patient insensible to the pain of the operation. The partly operated upon is a respectable Chinese merchant of this place, about 30 years of age, and of a spare habit of body. The tumour

began to make its appearance on the inner side of the upper lip several years ago; it had attained the size of a common walnut, was free from pain, but inconvenient from its bulk and situation, and as latterly it had been growing quickly, the patient was desirous to have it removed. When informed of the effects which have been usually observed from ether administration as above, he said, "that was the sort of medicine for him" and requested that it might be used. Everything being prepared and the patient seated for the operation, a common bladder fitted with an ivory tube, as recommended by Mr Herapath, was the apparatus used. Into this was poured half an ounce of good sulphuric ether, the bladder was then blown up and well agitated so as to saturate the air in it with the vapour, after which the patient was desired to receive the pipe into his mouth, to embrace it with his lips and breathe freely through it. His nostrils were held perfectly closed. After a very few inhalations, and certainly in a space not exceeding a minute and a half, the patient slightly groaned, his lips let go their hold and the pipe fell from his mouth. He appeared in a deep sleep and there was total suspension of motion. The operation was now commenced and completed in about four minutes, during which he continued to groan but never uttered a word or moved a muscle, and his breath was remarked to be extremely cold. "At the termination of the operation he was still insensible and as he continued in this condition two minutes afterwards with a pulse of 40, extremities cold, general pallor, lips, and conjunctivae especially pale, some wine was administered and water sprinkled over the face, and these repeated several times before he began to recover his powers of sensations and motions. Altogether, the effects continued fully ten minutes.

The patient described his feelings while under the influence of ether as follows:

The first draught of the vapour produced a sensation of coldness which spread upwards to the different parts of the body; the hands and feet became numb and destitute of feeling, then there were giddiness and a feeling of confusion in the head, noise in the ears, and lastly a total loss of power and feeling in every part, but still a pleasant sensation of most perfect ease and quiet, altogether different from that kind of stupor occasioned from an overdose of spiritous liquors. He could draw no comparison between its effects and those produced by smoking chandoo (opium) never having himself on occasion tried the latter. He was not conscious of having groaned, but he knew when the operation was commenced and when it was completed, during it he was sensible of a scratching in the part, which however, he described not so much as a feeling of pain as a sense of the sound of that, and it was, at all events, not so disagreeable as the slight pain which on recovery he felt in the wound. A tingling sensation was experienced in all the extremities when the influence of the Ether began to subside, and which spread through them to the body before the sense of feeling and power of motion was perfectly restored. He felt a little drowsy afterwards, laid down and had two hours' sleep from which he arose feeling in every respect comfortable and on the same day he followed his usual avocations.

PIONEER GENERATION OF MALAYSIAN ANAESTHESIOLOGISTS 1959-1970

In the 1950s, Anaesthesia services were available in Kuala Lumpur, Penang, Ipoh, Johor Bahru and Malacca Government Hospitals. The first qualified British anaesthetist was Dr E G Hudson who worked in Kuala Lumpur from 1947-1951. One of his early anaesthetic trainees was Dr Fred Pais who settled in Singapore. Dr J George Lomaz was a Polish doctor who emigrated to Malaya and served in Kuching as a general medical officer until 1952 when, at the encouragement of Dr Pais, he went to Liverpool to study anaesthetics under Professor Cecil T. Gray. Dr Micaleff was another anaesthetist from Malta. In 1953 Dr L P Scott was appointed specialist anaesthetist on contract first in Kuala Lumpur and then in Penang. Dr A L Gardiner was an anaesthetist in Taiping and later at Lady Templar Hospital, Cheras, Kuala Lumpur.

In Penang Hospital, Dr (Professor) John Francis Nunn was a general duty medical officer. Nunn had arrived from England in December 1949 with the experience of 20 anaesthetics he had administered as a medical student. He was placed in charge of anaesthetics for surgery, carried out in the main operating theatre, and obstetric anaesthesia, the latter performed in the maternity wing across the Residency Road. He had then no qualifications in anaesthesia but a real interest and was the first to use cyclopropane and muscle relaxants in Penang. A 1:1 mixture of oxygen and cyclopropane was used for efficient induction of anaesthesia. The apparatus for delivering this mixture became well known to Malaysian anaesthetists as Nunn's Bag although it was correctly a modification of Dr J.G. Bourne's Bag, consisting of a two-litre bag attached to a one litre pre-filling bag. Open chloroform and ether, using a Schimmelbusch mask with oxygen supplementation via nasal catheter, were the principal methods of anaesthesia. Intravenous thiopentone was used for rapid induction of anaesthesia and spinal heavy nupercaine was also available. By 1950 the introduction to Penang of the anaesthetic machine, known as Boyle's apparatus, of laryngoscopes, curare and

tracheal tubes were a great assistance to Sam Campbell the surgeon. The following year closed circuit anaesthesia was added to the growing armamentarium.

Dr Franklin Rajendram Bhupalan was born in Kuala Lumpur on 18th October 1923, schooled at the Victoria Institution and studied medicine at the King Edward VII College of Medicine, graduating MBBS from the University of Malaya in 1951. As a student he had completed a one-month anaesthesia clerkship, had administered anaesthesia for short dental procedures which had fostered his enthusiasm for anaesthesia practice. After his house officer year in Penang, he was a medical officer assigned to give anaesthetics in the operating theatre for the general surgeon Mr Sam Campbell. Duties in the Penang Hospital kept Dr Bhupalan busy and work was plentiful and challenging, frequently necessitating anaesthetic innovation to handle hyperthyroid crises and mandibular osteomyelitis presenting with trismus.

Dr Nunn taught anaesthetics to "various medical officers assigned to me, of whom (Frank) Bhupalan was the best". Nunn taught Bhupalan to administer oxygen and cyclopropane with Nunn's modification of the Bourne's bag. Using the first textbooks by Minnitt and Gillies, and J Alfred Lee and the British Journals which had just arrived in Malaya in 1952, Nunn and Bhupalan developed their expertise to use ether, chloroform, thiopentone, papaveretum, hyoscine, suxamethonium, nitrous oxide, ethyl chloride, rectal paraldehyde, bromethal, hexamethonium and spinal nupercaine to perform abdominal, thoracic, maxillofacial, orthopaedic, and paediatric surgery and obstetrics. Predominant malignant conditions requiring surgery were carcinoma of the cheek caused by betel nut chewing, lymphoepithelioma of the pharynx and cancer of the oesophagus. It is to their great credit that the standards of anaesthesia in Malaya were the equal of standards achieved in England.

In England Cecil Grey introduced thiopentone, d-tubocurarine, controlled hyperventilation and nitrous oxide with oxygen, known as the Liverpool technique and made the Royal Liverpool Hospital the most advanced British centre for anaesthesia training in the 1950s. In September 1956, Dr Bhupalan, his wife Madam Rasammah and their two young children, together with Dr George Tay from Singapore and Dr Fred Pais, sailed on SS Canton to Liverpool. Dr Bhupalan, Dr Tay and Dr Pais were British colonial Government scholars sent to study for the FFARCS. Dr Bhupalan was the first Malaysian to win the Nuffield prize (gold medal) for the highest examination score in the Primary FFARCS in 1957 and the pioneer Malaysian to pass the final FFARCS examination in 1958. On his return, Dr Bhupalan served for a year in the Malacca Hospital, taking over from Dr George Lomas, before becoming the senior consultant anaesthetist in the Kuala Lumpur Hospital from 1959 until 1962. The Kuala Lumpur Hospital was a very busy hospital, performing 11,000 surgical operations a year in operating theatres which, at that time, functioned without anaesthesia rooms, recovery rooms and sufficient numbers of anaesthetists. Dr Bhupalan was elected the first president of the Malaysian Anaesthetic Society (now the Malaysian Society of Anaesthesiologists) in 1964. Dr Bhupalan also served as an organising committee member of the Fourth Asian Australasian Congress of Anaesthesiologists in 1974 and was the President of the Second ASEAN Congress of Anaesthesiologists in 1981.

As the first Malaysian anaesthetist, Dr Bhupalan firmly planted the roots of the specialty's fraternity. To his patients who had significant apprehensions about anaesthesia and surgery, his soothing voice and gentle hands were a priceless gift enabling each patient's anxieties to be allayed, at the same time supporting the surgeon with the anaesthetic skills and camaraderie that were crucial to meet the task that lay ahead. Uncle Bhupy died on 26th May 2011, missed dearly by all who knew him and were touched by his warmth, kindness and supremely gentleman attributes.

Another senior anaesthetist with experience in Penang in the early days was Dr Law Gim Teik. As a medical officer in 1956, Law's first love was medicine. "I was more or less coerced to do anaesthesia" was his description of being brought into contact with the specialty. Dr Law served as the senior anaesthetist in Kuala Lumpur Hospital from 1963 until 1983.

1963, 5th October. Birth of the Malaysian Anaesthetic Society, 6 Jalan Garland (Dato' Seri Dr Shaari Road), 31350 Ipoh, Perak. Home of Dr M C Poopathy

1993, 1st - 3rd February. WFSA requested Malaysia and the Malaysian Society of Anaesthesiologists sponsored Dr Karis Misiran and Dr Patrick Tan to give lectures at the Refresher Course in Anaesthesiology, Ho Chi Minh City, Vietnam

FOUNDING OF THE MALAYSIAN SOCIETY OF ANAESTHESIOLOGISTS 1963

Despite working in frenetic circumstances, without the comradeship fostered in an anaesthetic department and with little opportunity to build an identifiable profile in the public's mind, early Malaysian anaesthetists were drawn towards fellowship and establishment of the specialty. Urged on by Sir Robert MacIntosh and Cecil Gray who both visited Malaya in 1961, and by Quintin Gomez from Philippines, Secretary General of the World Federation of Societies of Anaesthesiologists, Dr Bhupalan, Dr Antony Manavalan, Dr Gopal Krishnan and Mr Rajadurai travelled from Kuala Lumpur and Dr Law Gim Teik from Penang, and Dr T.V. Nesaratnam to meet at Dr M.C. Poopathy's house at 6 Jalan Dato' Seri Saari (formerly Jalan Garland), Ipoh, Perak on 5th October 1963 to found the Malaysian Anaesthetic Society (later Malaysian Society of Anaesthesiologists), registered on 29th January 1964.

FOUNDING OF THE COLLEGE OF ANAESTHESIOLOGISTS, ACADEMY OF MEDICINE OF MALAYSIA 1999

The College of Anaesthesiologists is one of the 10 colleges under the Academy of Medicine of Malaysia which was registered on 22nd December 1966. Dr S Jenagaratnam was instrumental as the chairman of the committee that oversaw the formation of the Chapter of Anaesthesiologists which was later accorded College status in December 1999, with Dr Patrick Tan Seow Koon who was elected to be the first President.

As the academic arm of anaesthesiologists in Malaysia, the college's primary objective to advance the art and science of anaesthesia and its related disciplines. The college works closely with the Malaysian Society of Anaesthesiologists to co-organise the Annual Scientific Congress of MSA-CoA, AMM, co-publishes a triannual newsletter, the Berita Anestesiologi, and oversees the parallel pathway training in Anaesthesiology with the Ministry of Health Malaysia.

THE FIRST UNIVERSITY DEPARTMENT OF ANAESTHESIOLOGY

The Department of Anaesthesiology in the University of Malaya was the first in the country to be established to further the science and practice of anaesthetics. After the training of the first Malaysian anaesthetists in the United Kingdom in the 1950s and 1960s, the creation of an academic department was the most significant step in the development of the specialty in Malaysia. It secured recognition for the specialty among medical and lay persons and provided a foundation for the training of doctors and, in time to come, anaesthesiologists. In clinical specialties directed by the staff of the faculty, emphasis was placed for sufficient staff to be provided so that adequate time was available for doctors to have enough contact time with patients to maintain high standards of diagnosis and patient care, time for teaching and research work. In its founding year in 1965, the department of anaesthesiology had one senior lecturer, one lecturer and one medical officer.

The safe provision of anaesthesia throughout the period of a patient's unconsciousness until recovery became the benchmark of the first Department's provision of quality health care. No longer were patients herded on trolleys in the corridor outside an operating theatre after surgery, without vigilant attention to a patient's pulse, breathing, oxygenation, haemorrhage, shock, or pain symptoms. No longer were anaesthetists pressured to place a patient under anaesthesia without pre-anaesthesia review, physiologic and pharmacologic optimization. Anaesthesia rooms and post-anaesthesia recovery areas, trained anaesthesia nurse assistants and recovery area nurses became the norm in the design and workflow of Malaysian operating theatres from the start of the University Hospital Kuala Lumpur.

The first department of anaesthesiology was headed by Dr A Ganendran who was working at the Singapore General Hospital and who was invited to join the University as a senior lecturer by the Dean Professor T J Danaraj. Dr Ganendran had been a graduate of Bristol University and was the second Malaysian to earn the Nuffield prize in the Primary FFARCS examination. He went on to be the first Malaysian to complete his M.D. thesis from his alma mater (1974) on the effects of Cholinesterase. His strong academic stature, a high regard

for British training coupled with a philosophical nature and good technique, earned respect from surgeons and he was appointed the country's first professorial chair in Anaesthesiology from 1975 to 1979 before he emigrated to Brisbane, Australia.

In 1965, Professor Danaraj and Dr Ganendran appointed Dr Alexius Ernald Delilkan and Dr Alex Isaac Gurubatham as the first ASTS Academic Staff Training Scheme Lecturer and Assistant Lecturer, respectively. In 1966, Dr M K Chin from Singapore and Dr Lim Say Wan from Kuala Lumpur were the ASTS appointees. After passing the Primary examination in London, Dr Delilkan and Dr Gurubatham became registrars in St Thomas's Hospital London, working with Drs Churchill-Davidson, Wylie, Nosworthy and J.G. Bourne, a visiting anaesthetist from Salisbury. On passing the FFARCS, Dr Delilkan returned immediately to the University Hospital. On 4th July 1967, Dr Ganendran and Dr Delilkan administered the first anaesthetic at the University Hospital Kuala Lumpur for a 30 year old male patient undergoing electroconvulsive therapy. Dr Delilkan was the second appointment to the chair of anaesthesiology in 1979 and served as head of the department from 1979 to 2000.

In 1975 the department consisted of two Associate Professors Dr Ganendran, Dr Delilkan and four lecturers, Dr Peter Kam Chin Aik, Dr Robert Liew Pak Chin, Dr Gracie Ong Siok Yan and Dr Tan Poh Hwa. This was a youthful and talented team which sounded the clarion for anaesthesiology research and learning in the country. In the faculty report of 1975, "The Department of Anaesthesiology has been engaged in various projects to investigate the usefulness of new drugs introduced in anaesthesia, with particular reference to the cost of these drugs. Modification of established anaesthetic techniques in ophthalmology and in electroconvulsive therapy, using scientific methods of evaluation had been of interest to several of the staff. Research into poisoning by anticholinesterases has been in progress for the last three years and the results had been published as a thesis for a doctorate in medicine. Research in progress included studying oxygen transport and its availability to tissues by stored blood as well as by blood in patients exposed by artificial ventilation to prolonged and varying concentrations of inspired oxygen. The stress response of patients and prolonged artificial ventilation also being studied to evaluate its possible metabolic consequences. The value of prolonged artificial ventilation in neonatal tetanus has been investigated and established as a means of reduction of mortality in that disease."

ANAESTHESIOLOGY EDUCATION IN MALAYSIAN UNIVERSITIES AND MINISTRY OF HEALTH MALAYSIA

Five public Universities and the Ministry of Health have been the prime source of growth in the numbers of trained anaesthesiologists over 70 years.

In the 1970s there were three public Universities with medical faculties. Universiti Kebangsaan Malaysia established the second academic department of anaesthesiology in 1972 with Professor Dato' Haji Abdul Hamid bin Abdul Rahman as its founding Head. Dr C H Lee and Dr Ahmad bin Ismail were Ministry of Health Anaesthesiology Consultants who were appointed as full-time lecturers. Dr Law Gim Teik, Dr Lim Say Wan, Dr Jenagaratnam, Dr K Vigneswaran and Dr A Damodaran were visiting lecturers. Dr Rusli bin Arshad, Dr Tan Kok Hin, Dr Peter Tan and Dr Indran Muthiah obtained their FFARCS and FFARCSI after training in UKM. In 1987, lecturer Dr Karis Misiran obtained FFARACS and was appointed Head of Department. Dr Karis, Professor Delilkan, and Drs Mackay, Kester Brown and John Paul from Australia, were examiners in the first Master of Anaesthesiology UKM examination in 1987. Dr Norsidah Abdul Manap, Dr Adnan bin Dan, Dr Goh Chin Woo, Dr Chen Tuck Pew, Dr Felicia Lim, Dr Wan Mohd Akbar bin Wan Moss and Dr Arbayah binti Rais were the first among distinguished graduates in the Master of Anaesthesiology (UKM).

University of Malaya commenced its Master of Anaesthesiology programme in 1987. Lecturers were Professor Delilkan, Associate Professor Gracie Ong Siok Yan, Associate Professor Ramani Vijayan, Dr Lucy Chan, Dr Wang Chew Yin, Dr Chan Yoo Kuen, and Associate Professor Patrick Tan Seow Koon. In 1991, Dr Aminah Ali, Dr Mary Cardosa, Dr Hussain H Ahmad, Dr Lilian Oh, and Dr Tan Cheng Cheng were the first among illustrious graduates from Master of Anaesthesiology (Malaya). In addition, Dr Loh Seck Poh, Dr Tan It and Dr Yong Boon Hun were trainee lecturers who completed the FANZCA.

Universiti Sains Malaysia in Kubang Kerian began its Master of Anaesthesiology programme in 1995 with lecturers Dr Kamaruddin Jaalam, Dr Nik Abdullah, Dr Sanjay Sharma, Dr Zulkarnain and Dr Wan Aasim. In 1999, Dr Usha Nair, Dr Shamsul, Dr Saedah Ali and Dr Ruwaida Isa were the first Master of Anaesthesiology (USM) graduates.

Universiti Putra Malaysia Anaesthesiology Unit (1999) commenced the Master of Anaesthesiology in 2013 with

Dr Noor Airini Ibrahim (Head), Dr Lim Thiam Aun, Dr Imran Osman, Dr Felicia Su-Min Hu and Afnizar Akbar as lecturers. Dr Aizad Azahar was the first Master of Anaesthesiology (UPM) graduate in 2017. In 2020, the Unit was renamed as Department of Anaesthesiology.

International Islamic University Malaysia in Kuantan is the latest university to provide the Master of Anaesthesiology program in 2014 with lecturers Dr Ariff Osman, Dr Mohd Basri Mat Nor, Dr Azrina Md Talib dan Dr Abdul Hadi Mohamad. The first specialist to graduate from the program in 2019 was Dr Shahir Asraf Mohamad.

The College of Anaesthesiologists of Ireland signed a memorandum of understanding with the College of Anaesthesiologists, Academy of Medicine of Malaysia on 27th April 2016 for a Parallel Pathway Anaesthesiology Training comprising the Final Fellowship of the College of Anaesthesiologists of Ireland (FCAI) examination, followed by 36 months of competency training in accredited Ministry of Health Hospitals, culminating in the Certificate of Completion of Training (CCT) in Anaesthesiology and Critical Care. The first specialist, Dr Indra Sadasivam, completed the FCAI CCT in this programme in 2019.

ANAESTHESIOLOGY IN MALAYSIA AND THE FUTURE

The National Specialist Register was created through legislation by Amendment to the Medical Act (2012) to credential each specialist under a specialty or subspecialty. In June 2021, the number of registered specialists in Anaesthesiology and Critical Care is 1,205 and the number of registered specialists in Intensive Care is 50. The time taken to achieve this since the first Malaysian anaesthesiology graduate (1959) is a little more than 60 years. Annually, an average of 85 specialists have completed Master of Anaesthesiology and CCT.

This achievement is hard won by total dedication - delivered by pioneering academics and anaesthesiologists who laid the foundations in five public universities and several teaching and Ministry of Health (MOH) hospitals, along with trainers in British, Australia-New Zealand and Irish Anaesthesia Colleges. Their combined efforts in anaesthesia education, training and research have raised a strong profile in Malaysia of anaesthesia, perioperative medicine, pain medicine and intensive care governance for public safety and comfort.

The need for many more specialists in anaesthesiology, perioperative medicine, pain medicine and intensive care continues to grow. A supply shortfall has generated particular awareness of the essential roles of anaesthesiologists through media and social media since the beginning of the COVID-19 Pandemic. Crudely, 1,205 anaesthesiologists represent 1 per 27,000 population and 1 intensivist per 1.6 million population. During the COVID-19 pandemic anaesthesiologists have provided unfaltering service and leadership to the healthcare system in managing, caring, providing comfort, compassion and dignity to COVID-19 and other patients. The Society and the College of Anaesthesiologists have been extremely supportive of members' experiences and provided leadership framing position statements on the allocation of resources during the pandemic. To maintain continuing professional development the Society's and College's Special Interest Groups have co-hosted a large number of well-attended anaesthesia, pain and intensive care webinars.

Anaesthesia, Perioperative Medicine, Pain and Intensive Care will continue their individual growth trajectories on the assurance that foundations laid 50 years ago by a very small number of steadfast industrious anaesthesiologists have multiplied their own numbers to provide great harvests of safety, sensibility, security and enhanced recovery for surgically susceptible patients, with the aim that such care be accessible by the entire population as early as possible in the future.

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The Cold Truth About Hypothermic Therapy Post-Cardiac Arrest

by Dr Cheah Kean Seng
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Long ago, we have been taught that patients who have sustained an out-of-hospital cardiac arrest should be placed under hypothermic therapy in the hospital for a better outcome. This eventually became the backbone of post-cardiac arrest care for years in practice. In fact, every hospital has its own protocol on post-cardiac arrest care and hypothermia post-arrest has been widely practised worldwide despite the lack of convincing evidence.

There were some hypothermic trials done 20 years ago but these ended with inconclusive results due to being unblinded studies and only small sample sizes involved.[1,2] The first TTM trial carried out in 2013 (comparing the outcome between hypothermia 33°C and normothermia 36°C therapy in patient post-cardiac arrest) showed that patients who were given cooling did not perform any better than the control group in general, be it overall mortality or neurological status after survival.[3] The first TTM trial started off with much enthusiasm and curiosity about whether will this consolidate and justify the principle that cooling is actually beneficial to post-cardiac arrest patients. Unfortunately, it did not show any benefits statistically.

Thus, TTM2 trial was conducted to look into whether cooling provides any benefits statistically. This is a multinational, multicentre randomised trial.[4] After initial screening, a total of 1850 comatose post-arrest patients presumed from cardiac causes was randomised to receive either hypothermic (33°C) or targeted normothermic (37.5°C) treatment in the hospital. Patients are also being followed up to assess if any change in long term outcome on (6 months and 24 months). Overall mortality was decided as the primary outcome, whereas the secondary outcome on the impact of hypothermia on the neurological function of survivors was assessed by Modified Rankin scale and EuroQo1 visual analogue scale (EQVAS) assessment tools. Recent results released after 6 months of follow-up shows there was no difference in all-cause mortality between the two groups. At 6 months, 465 of 925 patients (50%) in the hypothermia group had died, as compared with 446 of 925 (48%) in the normothermia group (relative risk with hypothermia, 1.04; 95% confidence interval [CI], 0.94 to 1.14; P=0.37). Even among the survivors (1747 patients) in whom the functional outcome was assessed, 488 of 881 (55%) in the hypothermia group had a moderately severe disability or worse (modified Rankin scale score ≥4), as compared with 479 of 866 (55%) in the normothermia group (relative risk with hypothermia, 1.00; 95% CI, 0.92 to 1.09). They did not seem to have better neurological function than the control group. Patients in the hypothermic group were more likely to develop arrhythmias resulting in haemodynamic compromise (24% vs. 17%, P<0.001). The incidence of other complications such as the risk of sepsis, skin breakage, pneumonia or clotting abnormalities did not increase with hypothermia.

TTM2 is a better study as it involved a larger sample size (nearly double the first study), and instead of actively subjecting all patients to normothermia (36°C) like TTM1, only patients with a temperature higher than 37.8°C will receive the cooling intervention (surface or intravascular cooling). It is also a trial with a better strength of the study as the sample number was close to the sample size needed (1900) to achieve 90% power of the study and a p-value of 0.05. The patients also share similar characteristics before randomisation to reduce bias. So, this is a promising start to a good trial. In order to answer the question left over from the first TTM trial, patients are also being followed up for a longer period of time than the first (6 months and 24 months vs 3 months) to determine if, by cooling, patients have any long-term benefit or harm. Although more than half (55%) of the patients were excluded from randomisation after the screening process, mainly due to delayed presentation after the successful return of circulation, only a small number was due to unknown reasons.

There is little doubt that other factors that were missing could be the confounders in this trial. For example, the trial did not give us information regarding the duration of hypothermic patients on a ventilator in comparison with the one from the control group, because subjecting a patient to a body temperature of 33°C means it will take

a longer time for a patient to wake up hence the longer duration of ventilation, more complications and ICU mortality. The trial also did not answer if early cooling could improve survival and outcome because the mean temperature of 33-34°C is only achieved at 3 hours after the arrest, which could bypass the 'golden hour' rule for any benefit to be seen. As hypothermia leads to haemodynamic compromise in the treatment group, whether this has an impact on overall mortality need to be explored. That is because haemodynamic stability also means the patient will be likely to require a longer ICU stay, use of vasopressors and kidney injury. All of these could contribute to higher mortality among the treatment group[5] and clouding the actual benefits of hypothermia in patients.

So, where do we go from here? Should we just give up on the cooling treatment in arrest patients? The answer is NOT YET. Cooling patients might not have clear benefits now but pyrexia has been well known to cause significant detrimental effects on neurology and hence poor outcomes of the patient. As the review is still ongoing to see any chance for hypothermic treatment turning the tide around in long term, a rational approach should be practised in treating post-cardiac arrest patients for now. With the evidence available from TTM2 we can confidently cool down patients to lower temperature without worrying it will bring more harm such as sepsis and issues with coagulation. We might not have to cool the patient aggressively until 33°C in post-arrest care but we should still be vigilant with the patient's temperature (bladder, nasopharynx or oesophageal probe monitoring) and more importantly, still aggressively treating a patient with fever (37.8°C or higher) in post-arrest because any intervention that can reduce the harm to the patient is the first winning step until the next discovery is made. I hope that future trials could fill in the blank for us.

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A Novel Way of Positioning for Intubation: Bed-Up-Head-Elevated Using Bed Controls

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INTRODUCTION

Intubation is a skill that anaesthesiologists must have as part of their arsenal in managing patients undergoing surgery or critically ill patients. It is a skill gained through years of training and experience, finally culminating in anaesthesiologists being considered as masters of airway management. As every anaesthesiologist will know, the positioning of a patient prior to intubation is one of the most important aspects of successful intubation.

Most anaesthesiologists in Malaysia are familiar with and, in fact, regularly practice the sniffing position for intubation, using pillows or head rings. For obese patients, the ramping position is commonly used, utilizing pillows, blankets, or specialized positioning devices. Lee et al in 2007 introduced a novel ramping position, by studying the effects of back elevation of 25° using bed controls compared with the supine position.[1] This new positioning, also termed bed-up-head-elevated (BUHE) position for intubation, has gained more and more popularity in recent years. Despite that, few anaesthesiologists in Malaysia have heard of the BUHE position.

The BUHE position is a variation of the ramping position, using bed controls alone to elevate the head of the bed (by breaking the bed at the level of the patient's hip to prevent patient from sliding off) until alignment of the patient's sternal angle and external auditory meatus is achieved (Figure 1).[2] To achieve this endpoint, the bed elevation could range from 15° to 45°. This article will discuss the benefits and potential complications of the BUHE position, and its applications in the operating theatre (OT) and the intensive care unit (ICU).

Figure 1: Bed-up-head-elevated position. The head of bed is elevated until the endpoint of horizontal alignment between the sternal angle and external auditory meatus is achieved

BENEFITS OF BUHE POSITION

Improved laryngeal exposure

One of the main advantages of the BUHE position is improved laryngeal exposure, facilitating intubation. In their pioneering RCT, Lee et al investigated the 25° back-up position for intubation in 40 surgical patients undergoing general anaesthesia. The authors found that the 25° back-up position provided a more superior laryngeal view, by increasing the percentage of glottic opening (POGO) (Figure 2) score from mean 42.2% in the supine group to 66.8% in the back-up group.[1]

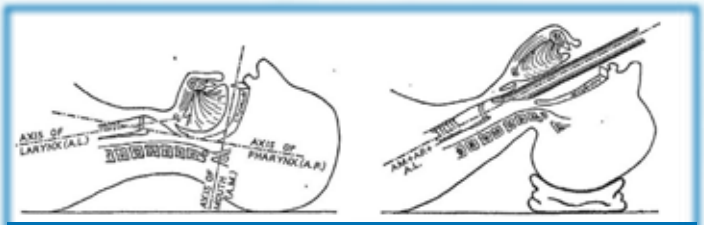

Figure 2: Percentage of glottic opening (POGO). A 100% POGO score refers to visualization of the entire glottic opening from the anterior commissure of the vocal cords to the interarytenoid notch. A POGO score of 0% refers to no visualization of laryngeal structures

The finding by Lee et al has been confirmed by a recent RCT investigating the BUHE position, carried out by Tsan and colleagues, which compared the BUHE position with video laryngoscopy (VL).[2] In this study, 138 surgical patients undergoing general anaesthesia had a baseline Macintosh blade laryngoscopy in the SSP position, followed by randomization to one of two groups preceding intubation, namely Group BUHE (direct laryngoscopy in BUHE position) or Group GLSC (VL using Glidescope). The authors found that mean POGO scores between both groups differed by -6.3% (98% CI, -13.2% to 0.6%), indicating non-inferiority of BUHE laryngoscopy to VL within the prespecified margin of 15% difference. For patients undergoing intubation in the BUHE position, there was a clinically significant mean improvement in the POGO scores compared with the baseline SSP position [mean improvement 25.8%, $p < 0.0001$]. Importantly, a subgroup of patients with Cormack-Lehane (CL) grade III classification in the SSP demonstrated a mean 49.17% improvement in POGO scores, converting potentially difficult intubations into straightforward intubations.

Further evidence on the superiority of the BUHE position over SSP for optimizing laryngeal exposure has also been suggested by a recent systematic review and meta-analysis.[3] This study compared the ramping position and the SSP [ramping position defined as the back elevated position in which the sternal notch and external auditory meatus were horizontally aligned, irrespective of the methods used (specialized pillows, blankets, head-of-bed elevation, etc)]. There was no difference found between groups with regards to odds for CL 1/2 or CL 3/4 views. However, further subgroup analysis based on type of population [surgical vs intensive care unit (ICU) patients] revealed that in surgical OT patients, patients in ramping position had a significantly higher odds of CL 1/2 views, and a lower odds of CL 3/4 views.

In the only RCT to date investigating the BUHE ramping position for intubation in ICU patients, Semler et al compared the ramped position (head of bed elevated to 25º) and the SSP for emergency intubation.[4] The authors discovered that there was a higher incidence of CL 3/4 views in the ramped group (25.4%) compared to the SSP group (11.5%) ($p = 0.01$). Of note, a majority of the intubators reported having more experience intubating in the SSP compared to the ramped position. Until further evidence becomes available, this study provides the most current evidence with regards to the effect of BUHE position on laryngeal exposure in ICU patients.

The explanation for improved glottic exposure in the BUHE position may be that this position confers a biomechanical advantage during intubation. When compared to the SSP position, the BUHE position allowed the operator to change the direction of force (relative to the horizontal plane) required to lift the laryngoscope handle, from about 45° in the SSP to about 20° in the BUHE position.[1] This subsequently led to a change of force and torque, by increasing horizontal force and reducing vertical force against gravity. In other words, with the same force, the operator is able to push the laryngoscope blade further forward rather than upward to obtain the most optimal laryngeal exposure. Another potential explanation for the improvement in laryngeal exposure is the movement of the laryngeal structures in the BUHE position. When the torso is elevated, laryngeal structures are pulled more caudally directly through the effects of gravity, or indirectly through the pulling down of the whole upper thorax which is connected to laryngeal structures. This could affect the laryngeal axis, bringing it nearer to alignment with the line of sight, and hence improving laryngeal view.[1]

Effective preoxygenation

Aside from facilitating a better glottic view during tracheal intubation, the BUHE position also has the added advantage of improving the effectiveness of preoxygenation during intubation. There is strong evidence that the BUHE position improved the tolerance of apnoea in surgical OT patients, by prolonging the safe apnoea period (SAP), defined as the time taken for oxygen saturation to drop to a low level during apnoea. Boyce et al in 2003 were the first to investigate the impact of positioning on apnoea tolerance.[5] They randomized 26 obese surgical patients to one of three groups, namely 30° reverse Trendelenburg, 30° back-up, or horizontal-supine positions. They demonstrated that the SAP was significantly prolonged in the ramped positions compared to the supine position ($p < 0.001$). Subsequently, other RCTs have also showed similar findings in obese and non-obese OT population, with all demonstrating statistically and clinically significantly prolonged SAP in the ramped position compared to the supine position.[6-8]

On the other hand, available data on the effectiveness of preoxygenation in BUHE position for ICU patients remain limited. The only RCT to date which have focused on critically ill ICU patients was carried out by Semler et al.[4] The authors reported no difference in the lowest arterial oxygen saturation peri-intubation (defined as time from induction to 2 minutes after successful endotracheal intubation) between groups. Additionally, there was no difference in incidence of hypoxaemia $SpO_2 < 90\%$ or $SpO_2 < 80\%$ between groups. These findings, however, have been criticized and should be interpreted with caution as patients in both groups may not be comparable.[9] There were significantly more difficult airways in the ramped group (CL 3/4 views) compared to the sniffing group, and hence time required for intubation in these patients were longer.

The reason for improved effectiveness of preoxygenation in the BUHE position can be understood from a physiological perspective. Studies have shown that the ramped BUHE position is associated with increase in functional residual capacity (FRC).[10] In the raised torso position, the pressure exerted by abdominal contents on the diaphragm is reduced, allowing the diaphragm to descend further. Additionally, the weight of the chest wall tissues compressing the lungs is also reduced. All this lead to an increased FRC, which serves as a storage for oxygen molecules. The additional oxygen reserve subsequently allows a longer period of apnoea without adverse complications.

Success of intubation

The BUHE position has been found to be associated with a higher rate of successful intubation. A well-designed RCT conducted by Lee et al investigated the rate of successful intubation between the ramped and sniffing positions in surgical patients with expected difficult intubation.[11] In their study, the authors found that the ramped position was significantly associated with a higher rate of successful intubation (Ramped 63% vs Sniffing 42%, $p < 0.05$). Additionally, more patients in the ramped group were successfully intubated within the first two attempts compared to the sniffing group.

Meanwhile in the critically ill population, the evidence of BUHE position on intubation success at first attempt remains controversial. In a prospective observational cohort study, Turner et al analysed 231 emergency intubations performed in the supine (head elevation 0 - 10°), inclined (11 - 44°) and upright (≥ 45°) positions. They found a higher first pass success rate in the upright group (85.6%) and inclined group (77.9%) compared to the supine group (65.8%) ($p = 0.024$). Interestingly, the authors also demonstrated increased odds of first pass success for every 5° increase in angle of bed elevation (Adjusted OR 1.11, 95% CI 1.01 - 1.22, $p = 0.043$).[12] On the other hand, Semler et al in their study on ICU patients found a lower rate of success at first intubation attempt in the ramping position (76.2%) compared to the sniffing position (85.4%) ($p = 0.02$).[4]

Time required for intubation

Several studies have shown that the BUHE position does not prolong the time to intubation, but may in fact shorten it. Tsan et al investigated the BUHE position and showed that the time to intubation in BUHE direct laryngoscopy patients (mean 36.23 seconds) was shorter than the time to intubation for patients undergoing VL (mean 44.33 seconds).[2] In addition, a prospective cohort study demonstrated that the 25° back-up position was associated with a shorter median time to intubation (median 24 seconds) when compared to the SSP (median 28 seconds) ($p = 0.031$).[13] Although the differences in time required may not be clinically significant, it is an added benefit when performing intubations in this position, especially in patients undergoing rapid sequence intubation or those with poor pulmonary reserves.

Complications during intubation

In patients requiring intubation in the ward and ICU, there is data to suggest the BUHE position is associated with a lower risk of peri-intubation complications. Khandelwal et al conducted a retrospective cohort study investigating complications associated with the BUHE position and SSP. The authors found that the BUHE position was associated with a lower risk of complications (any of difficult intubation, oesophageal intubation, hypoxaemia, or pulmonary aspiration) (Adjusted OR 0.47, 95% CI 0.26 - 0.83, $p = 0.01$).[14]

Other benefits

Additional benefits of placing patients in the BUHE position for intubation include the ease with which patients' positions can be adjusted. In the majority of OTs in Malaysia, the OT table is equipped with electronic controls, allowing staff to manipulate the table position with the press of a button. This allows much easier positioning compared to physically lifting patients to place pillows or blankets below their torsos and heads. Moreover, risks of cervical trauma or intravenous lines disconnection is greatly minimized. In the event the patient has to be placed supine for any reason post-intubation, this can be easily done with bed controls, without the need to lift an anaesthetised patient up to remove the pillows and blankets.

POTENTIAL COMPLICATIONS

From a physiological standpoint, there is a theoretical complication associated with the BUHE position. Due to venous pooling in the lower extremities and subsequent reduced venous return to the heart, cardiac output and cerebral perfusion can be compromised during induction of anaesthesia. The potentially detrimental impact of a transient reduction in cardiac output, in the setting of sympathetic stimulation from laryngoscopy and intubation, has yet to be proven from scientific data. To date, no studies investigating BUHE position have reported any adverse events such as hypotension during intubation in the ramping position. However, until more evidence is available, it is important to keep in mind the possible dangers of hypotension and cerebral hypoperfusion when intubating patients in the BUHE position. In physiologically vulnerable patients, it is important to immediately place the patient back supine after induction of anaesthesia and treat hypotension accordingly with vasopressor agents.

APPLICATIONS IN OT AND ICU

In the OT population, endotracheal intubation in the BUHE position is associated with many advantages and lack of proven disadvantages. Because of this, it is an ideal time to reconsider whether the SSP should still be the starting position for intubation. The development of the

SSP was based on a few descriptive articles from 1852 to 1944, and yet it has become the gold standard for positioning.[15] Newer evidence in the 21st century has challenged the superiority of the SSP for intubation, finding that it may not be as beneficial as once thought.[16] With the amount of scientific data supporting the BUHE position, it is sensible to replace the SSP with the BUHE position as the ideal starting intubation position. In patients who may be vulnerable to hypotension or the effects of hypotension, the BUHE position may still be used with adequate precautions taken such as optimizing volume status and usage of vasopressor agents.

On the other hand, the application of BUHE position as a starting intubating position in critically ill patients is not so straightforward. Arguments for it state that there is evidence the BUHE position is associated with lesser peri-intubation complications. However, there is a risk of worsened glottic exposure based on available evidence. There is also conflicting data to suggest either a higher or lower rate of successful intubation. Until more research is available, the decision to place critically ill patients in the SSP or the BUHE position should be on a case-by-case basis, depending on the clinical judgment of the clinician.

CONCLUSION

The BUHE position is a novel and easy way to position patients for intubation, with multiple benefits and no proven disadvantage. Anaesthesiologists should consider the BUHE position as a starting position for endotracheal intubation in the OT for the majority of patients. More research is needed to determine the suitability of BUHE positioning for intubations in the emergency setting.

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My Journey

by Dr Mazlilah Abdul Malek
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Looking back at almost a year ago, my journey as a Senior Fellow in Cardiac Anaesthesia and Intensive Care in University Hospital Southampton (UHS) NHS Foundation Trust in the United Kingdom was one with many challenges. My overseas attachment was due in February 2021 thus I started my applications as early as December 2019 by emailing many cardiac anaesthesia consultants in both the UK and Australia. But with the pandemic proving to be more than just a hindrance, getting applications through during this time proved to be tougher with many delayed replies. They were all enthusiastic to have me as their Clinical Fellow and offered guidance for my applications but, due to several reasons, I ultimately decided to go to the UK. There were countless tasks that had to be completed, most arduous would be the documentation and administrative work needed to get the applications accepted for consideration. Part of it was having my medical qualifications verified by the Electronic Portfolio of International Credentials, a service of the Educational Commission for Foreign Medical Graduates which is an international independent body that verifies foreign medical qualifications, a prerequisite to have me licensed for practice in the UK by the General Medical Council (GMC). Another requirement to be fulfilled for the GMC was that I had to provide evidence of English proficiency by obtaining at least the minimum requirement in either International English Language Testing System or Occupational English Test exams.

Nobody would have predicted that the COVID-19 pandemic would drop like a bomb and loom over all aspects of life affecting everything. This made the application processes so much tougher as local and international bodies started working from home while all healthcare workers and government bodies around the world scurried to focus on one thing only, tackling the COVID-19 pandemic. Our subspecialty and Masters training in Malaysia were also put on hold. Despite all this, I was adamant on keeping tabs with the NHS Jobs website and I had my eye set on UHS as it was the only accredited centre in the UK that offers European Association of Cardiothoracic Anaesthesia (EACTA) Fellowship which I was very keen on doing. UHS, however, was not part of the Medical Training Initiative by the Royal College of Anaesthetists which meant that I had to get the Tier 2 Visa and GMC registration all by myself. Out of three interviews, I successfully received offers from two of them; the post for Fellow in Paediatric Cardiothoracic Anaethesia in Newcastle Upon Tyne and to my delight, the post for Clinical Fellow in Cardiac Anaesthesia and Cardiac Intensive Care in UHS and it was not difficult for me to select between the two. Apart from the EACTA fellowship, UHS also offers a multifaceted cardiothoracic anaesthesia experience with a wide mix of cardiac and thoracic cases from adult, adult congenital, paediatrics, interventional cardiac catheter labs, extracorporeal membrane oxygenation and cardiac intensive care training, basically covering everything under the sun except for heart transplants. With Southampton located in the south of England, it brings together the warmer weather and a closer proximity to London compared to Newcastle which became the icing on the cake.

As I received the letter of offer from the UHS, it was time for me to complete all the necessary documents for my Tier 2 Visa application, GMC registration as well as getting the permission from the Ministry of Health Malaysia. With determination and persistence that I had, all were done and dusted, and I started my journey in November 2020, three months earlier than expected. Thankfully, I was able to travel to the UK without any hitches as a month later, the country went into lockdown. Oh blimey! Luckily for me too, my husband was able to follow and helped me settle down in Southampton. We just got married a few

months earlier and I was happy that he was able to spend some time with me in the UK.

I arrived in the gloomy and wet autumn weather but was cheerfully greeted by Dr Kirstin Wilkinson and Dr Jonathan Huber, the lead consultants for the fellowship programme. Much to my disappointment, I was then told that the EACTA Fellowship course recently changed its programme to a mandatory two years (one year of basic training and another year of advanced training) in an accredited training centre along with the completion of transoesophageal echocardiography (TOE) certification with the European Association of Cardiovascular Imaging (EACVI). As I was only staying for a year of overseas training, this had meant that I was unable to partake as an EACTA Fellow.

The UHS serves as a District General Hospital as well as regional/supra-regional specialist hospital comprising Southampton General Hospital (SGH), Princess Anne Hospital and both Netley Castle and Countess Mountbatten House for terminal and respite care. Under the Wessex Cardiothoracic Unit, I was part of the Cardiac Anaesthesia Unit which houses 14 consultants, 5 associate specialists, 4 anaesthetic trainees and between 9 to 12 fellows at one time from different nationalities who see a myriad of cases daily along with high turnover of patients in 3 adult cardiac theatres, 1 paediatric cardiac theatre, 1 thoracic theatre, cardiac hybrid theatre, cardiac catheter labs, a 16-bedded Cardiac Intensive Care Unit (CICU) and 10-bedded Cardiac High Dependency Unit. I usually work in SGH but also the Princess Anne Hospital on occasions when I needed to anaesthetize those cute neonates in their neonatal intensive care unit. I could just eat them up (not literally, of course).

The early part of 2021 was tough. Cardiac theatres and CICU were forced to run at reduced capacity to make room for the influx of COVID cases that came through the doors. Rota had to be attuned which led me to briefly be part of the Non-COVID ICU (NOVID) and proning team. Fortunately, the COVID situation in Southampton improved and the cardiothoracic services were again fully operational by the end of February 2021. There were many challenges in the beginning, and I had to adjust being in a new hospital with different work culture and processes. The hospital information system was different but luckily the same system was used across all critical care units, whereas other wards had different software in use.

Some of the clinical protocols and practices did differ. Some drugs and medication prescribed were ones that I was not familiar with, have never used or perhaps were just not available in Malaysia. It took me a few months to get used to the systems, processes, surgeons' preferences, staff and how things are done in UHS. I have always juggled my special interests in anaesthesia between paediatric, cardiac and intensive care. The settings in UHS gave me the perfect combination to do all three but with more time spent in paediatric cardiac theatres after professing extra love for anaesthesizing the little bubbas. It is a field I find challenging yet gratifying.

I was fortunate to have had the opportunity to work with all 14 dedicated consultants who have been extremely helpful and supportive in my learning. They often allowed me to lead with their guidance and this greatly helped boost my confidence knowing that I have their trust in running the operation theatres and CICU. I was also given the opportunity to sharpen my skills and hone my knowledge even further in cardiac anaesthesia and perioperative TOE by attending weekly teachings and this encouraged me to pursue the EACVI TOE certification. One of the advantages working in UHS was the ability to share my experiences and learn from others who had worked in the clinical settings elsewhere. Many of my senior fellow colleagues were from countries like India, Egypt, Jordan, Mexico, Romania and Ireland to name a few. This made it into a wholesome learning experience where all of us were able to compare notes and learn from each other. It was an eye-opener working with people from different backgrounds in good camaraderie as equal colleagues; there were not any discrimination, and everyone happily worked together as a team. Even the consultants were more like colleagues and friends rather than bosses. Not only have I received invaluable experience working in UHS, but I also gained lasting friendships. This experience has been greatly rewarding in both my personal and professional growth as a doctor, a team member, a cardiac anaesthetist and, most importantly, as a person.

As I am nearing the end of my stint here in the UK, it is bittersweet to be leaving soon for home. I strongly recommend UHS as an ideal training place for cardiac anaesthesia for future trainees from Malaysia. I hope that I have carried the Malaysian flag well in the UK and I will be bringing home many good memories along with clinical knowledge, skills and experience that would make me a better cardiac anaesthetist. Thank you, Wessex Cardiothoracic and Cardiothoracic Anaesthesia Unit, UHS, the experience working there was nothing less than amazing.

MyAnaesthesia 2021: Dawn of a New Era

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The Malaysian Society of Anaesthesiologists and the College of Anaesthesiologists, Academy of Medicine of Malaysia had its first ever virtual Annual Scientific Congress from 6th to 8th August 2021. With the theme ''MyAnaesthesia 2021: Dawn of a New Era", the Organising Committee led by Chairperson, Professor Dr Marzida Mansor, worked hard to bring to fruition a congress that marks the beginning of an era when we embrace a new way to reach out to our members and scientific fraternity.

With 1393 delegates, this congress received the highest ever number of registered delegates in its history. The Scientific Committee led jointly by Dato Dr Jahizah Hassan and Associate Professor Dr Azarinah Izaham ensured that the content, delivered by 23 foreign speakers and 39 local speakers, was current and relevant to the interest of the delegates.

For the Opening Ceremony on 7th August 2021, we had the Director-General of Health, Tan Sri Dato' Seri Dr Noor Hisham Abdullah, who delivered the keynote address and officially declared the Congress open. He acknowledged the immense contribution of the Anaesthesiology and Critical Care fraternity in helping the country combat the COVID-19 pandemic. It was an amazing virtual opening ceremony which received much attention from major news media, including The Star, Malay Mail, New Straits Times, Malaysiakini and various other Facebook postings. There were headlines with outpourings of support and encouragement echoing his speech for the Anaesthesiology and Critical Care fraternity in our daily challenge and struggle to provide care for COVID-19 patients and leading the way in the pandemic management for the sickest of the sick. It was at the height of uncertainties of which direction the pandemic was going in the country that we held this conference, and the caring words spoken directly by Tan Sri Dato' Seri Dr Noor Hisham to us gave us much respite in the troubled world.

During the Opening Ceremony, Professor Dr Hj Karis Masiran was conferred the MSA Honorary Membership in recognition of his enormous contribution to the field of Anaesthesiology and Critical Care in Malaysia, in particular the establishment of the Master of Anaesthesiology Specialty Training Programme.

Apart from the scientific congress, we also had the Annual General Meetings of both the Malaysian Society of Anaesthesiologists as well as the College of Anaesthesiologists. The AGMs held on 6th August and 7th August respectively were well attended and had active participation from members. Elections were held and a new team each for both the College and the Society was selected.

The poster and free paper presentations were well represented by young investigators from all over the country. The esteemed panel of judges was very impressed by the high standard of the scientific content of the papers.

Dr Chong Jun Leong from University of Malaya and Dr Low Joe An from Universiti Kebangsaan Malaysia won the MSA Award and the MSA Young Investigator Award respectively. Associate Professor Dr Azrina Md Ralib from International Islamic University Malaya, Dr Lee Jia Hang from Universiti Kebangsaan Malaysia and Dr Kuan Tong Yin from International Islamic University Malaya, won the first, second and third prizes for the E-Poster Presentations. Dr Rusnani Mustapha Kamar from Universiti Teknologi MARA won the Best Case Report/Series prize. A big congratulation to all winners.

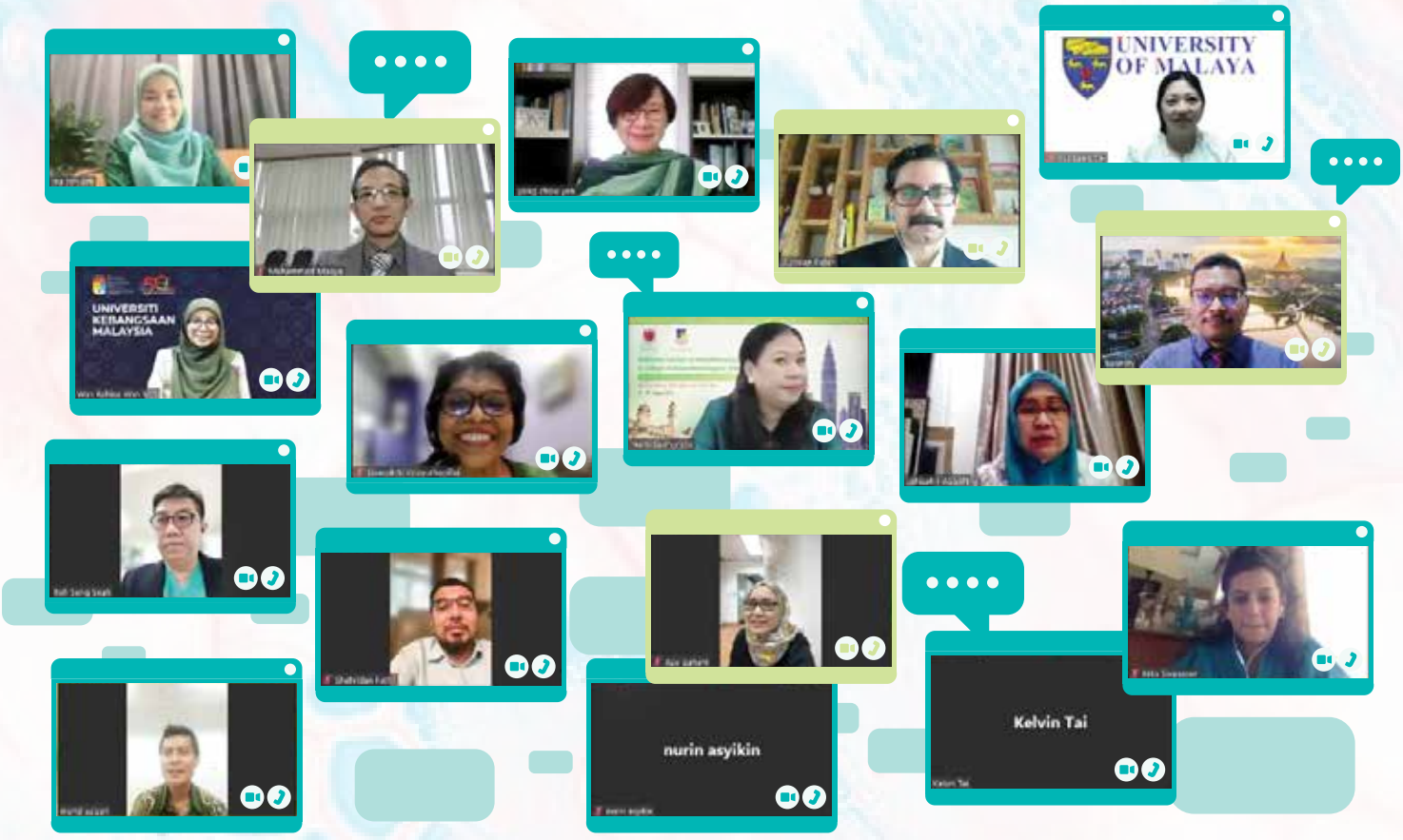
Delegates stayed with us till the very end of the last day when we held the Datuk Dr Radha Khrishnan Best Master Student Award Ceremony. Due to the absence of ASC 2020, best students from 2019, 2020 and 2021 received the awards at the same time. They were Dr Mohammad Hafizshah bin Sybil Shah from University of Malaya for November 2019 examination, Dr Samuel Tsan Ern Hung from University of Malaya for the November 2020 examination and Dr Kuan Tong Yin from International Islamic University Malaya for the April 2021 examination. A round of applause for the recipients.

For the virtual exhibition, we had a total of 19 pharmaceutical and biomedical industry partners. The booths provided interactive virtual connections between the industry representatives and delegates.

Last, but not the least, with delegates all holding on to their online communications on the congress platform, we conducted a Wheel of Fortune lucky draw to reward those who stayed on till the very end. It was indeed very fun and exciting to end the congress on this note, with hilarious call-outs and re-draws conducted by our very animated Master of Ceremony, Dr Mohd Azizan Ghazali. At the very end, the MSA President for the coming year, Professor Dr Ina Ismiarti Shariffuddin, concluded the congress with a short farewell and appreciation speech.

MyAnaesthesia 2021 was a challenge, and an opportunity for us to learn as it was the first time we organised a virtual conference of this scale. The first day started with a small hiccup when the main server crashed, and we had to kick in the backup server which took a while to reboot. Luckily, we had a backup plan of sending the video links of the talks that were pre-recorded to the registered delegates via email. Thankfully by the later part of the morning, much of the technical difficulties were resolved and we were back to near normal. Although there were shortcomings especially from the IT aspects, we hope that a major part of the Congress remained beneficial to the delegates.

We do miss some of the camaraderie and networking opportunities that physical congresses present. However, what is evident over the last two years is that life is never going to be the same again. Learning to adapt to a 'new normality' and embracing opportunities that were not present before will have long lasting effects on the format future (actually current) conferences, seminars and workshops will be held. We hope in August 2022, MyAnaesthesia can allow us some degree of a face-to-face or hybrid congress. We look forward to meet up with all of you at the Shangri-La Hotel, Kuala Lumpur, both physically and virtually. Indeed, we have arrived at a new era.



National Anaesthesia Day 2021

by Associate Professor Dr Loh Pui San
University Malaya Medical Centre

Anaesthesia Day is an annual event that falls on 16th October every year. Despite facing numerous adversities for the last two years, both the Malaysian Society of Anaesthesiologists (MSA) and the College of Anaesthesiologists (CoA) continued to co-organise the National Anaesthesia Day (NAD) on a virtual platform to stream live and celebrate with the whole fraternity of anaesthesiologists in Malaysia.

At precisely 9.00am on a lovely Saturday morning (16th October 2021), the event, packed with many activities, started with Lagu Negaraku followed by an introduction by the lively and spontaneous Master of Ceremony, Dr Mohd Azizan Ghazali, from Hospital Kuala Lumpur. The event was blessed with the Doa Recital by Dr Mafeitzeral Mamat from Gleneagles Hospital Medini Johor. In the opening speech, as the Chair of the Organising Committee, Dr Gunalan A/L Palari expressed how this year's theme "Teamwork: Stronger Together" was reflected on the blueprint created in the midst of a pandemic where both the public and private sectors worked hand-in-hand to overcome the surging waves of COVID-19 cases recently. An example of this exemplary teamwork was the assistance extended by the private institutions to help decant many patients from public hospitals at the peak of the pandemic when admission beds were scarce. In many ways, he reminded us that the NAD was a meaningful celebration as a strong team.

In his officiating speech, Yang Berbahagia Tan Sri Dato' Seri Dr Noor Hisham Abdullah, Director-General of Health, thanked frontliners for their services and continued the emphasis on teamwork and to stay stronger together. "Alone we can do little, together we can do so much" were his wise words that echoed in our hearts when he praised the camaraderie developed among multidisciplinary clinicians throughout the country in the fight against COVID-19 in the last few months. His speech was then followed by a beautiful montage developed by the creative director of the Organising Committee, Dr Haslan Ghazali from KPJ Hospital Kuantan, which resonated the poignant unity among anaesthesiologists in overcoming the pandemic disaster that all of us had to face.

Similar to the virtual NAD in 2020, a forum was organised. This year, the discussion by the panel was led by two eminent fellow colleagues, Dr Gunalan A/L Palari from Subang Jaya Medical Centre and Datin Dr Vanitha Sivanaser from Hospital Kuala Lumpur. The six-member panelists were invited from various subspecialties, seniority and positions to represent the anaesthesiology profession and how each of them pursued different directions in the battle against COVID-19. First in line was the National Head of Anaesthetic Services in Malaysia, Dr Zalina Abdul Razak, who described the strategic actions of the Ministry of Health when several hospitals were converted fully to manage only COVID-19 cases, for example Hospital Ampang and Hospital Sungai Buloh. These were subsequently followed by newly established COVID-19 centres such as UKM Specialist Children's Hospital (HPKK). She praised all the medical officers who worked tirelessly throughout these two years as the backbone and pillar of our healthcare service. Most importantly, she noted the importance of a large workforce and the need to achieve the trajectory ratio of 5 anaesthesiologists to 100,000 population by 2030.

The next invited panelist was Professor Dato' Dr Patrick Tan from University Malaya Medical Centre (UMMC), Kuala Lumpur who has vast experience in intensive care and needed little introduction being the mentor for many anaesthesiologists amongst us. He related our current pandemic situation to the handling of the Nipah Virus epidemic in the past and emphasized that trust in teamwork builds resilience. In this age of digital technology, social media has become an easy source of information that can be rapidly disseminated regardless of the authenticity of content. Dr Hana Hazrani from Hospital Kuala Lumpur became our medical advocate by dedicating her time to field questions, allay fears and misunderstandings from the public through her social influence during the pandemic. In the panel discussion, Dr Hana Hadzrani outlined the importance of honesty and mental preparedness to face challenges in the future.

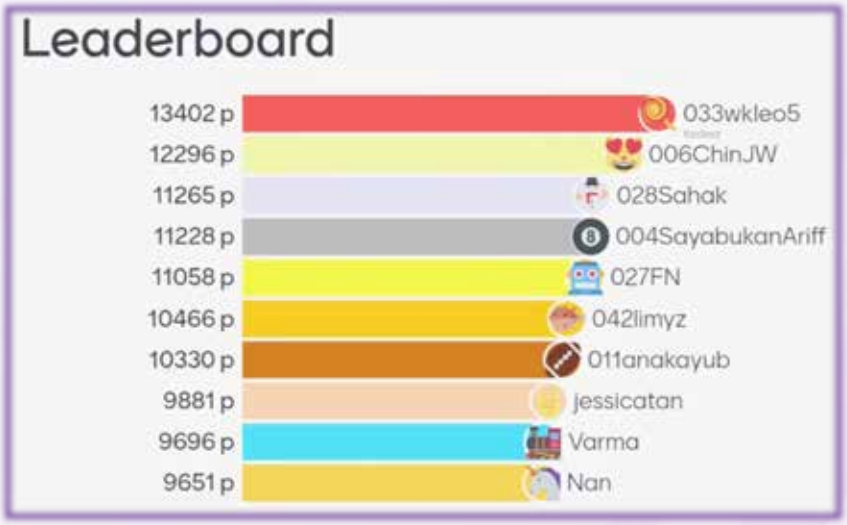
Representing the Ministry of Defence, Lt. Col. Dr Mohamed Azlan Ariffin from Hospital Angkatan Tentera Tuanku Mizan described the set-up of field Intensive Care Units (ICU) across the country. Previously, Ministries worked in silos and thus Dr Azlan suggested to form strong collaborations among the Ministries of Health, Education and Defence that should be transparent with one goal and one direction. Just like in a war, the battle against COVID-19 requires unified commands and coordination to win. As a training medical officer in the Anaesthesiology Department of UMMC, Dr Tan Boey Warn was also delegated heavy COVID-19 duties like many of his peers and, therefore, he could attest to the issues while performing the line of duty and juggling the safety of their families. He realized it was always best to be prepared for the unprepared. Last but not least, Dr Eng Kar Seng, the lead Intensivist from Hospital Sungai Buloh was interviewed at the forum. Dr Eng was given free rein to navigate his ICU team in leading the fully COVID-19 hospital at a time when cases were overwhelming in Selangor. "Everyone should be interdependent on each other," he said and should have individual coping mechanisms by practising balanced lifestyles, enjoying food or achieving satisfaction from witnessing patient's recovery.

Following the forum, the Presidents of the MSA and the CoA delivered their speeches. Professor Dr Ina Ismiarti Shariffudin, President of the MSA, delivered an impressive message that anaesthesiologists play unforgettable roles in many of our lives. Professor Dr Ina acknowledged the donations given to equip many COVID-19 hospitals. She also emphasized the classical Malay proverb "bersatu kita teguh, bercerai kita roboh," that symbolized the exact sentiments of "Teamwork: Stronger Together" as the NAD theme this year. An equally eloquent speaker, Professor Dr Marzida Mansor, President of the CoA, spoke on the collective public-private hospital response that helped tremendously in this pandemic and how teamwork skills should encompass leadership, communication, mutual monitoring and feedback. Although the MSA and the CoA were established 31 years apart, both will continue to work together in unison. It was also timely to reactivate the Wellness SIG as well as to bring forth the National Resilience Workshop and Joy at Work Campaign.

After all the formalities, it was time to have some fun. A lot of exciting announcements and activities were lined up for NAD. First of all, the

online competition for Anaesthesia Got Talent showcased a total of ten submitted videos. Dr Mohd Azizan then announced the top five short videos in no particular order - Hospital Sultanah Maliha Langkawi, Hospital Serdang, Hospital Tuanku Ja'afar Seremban, Hospital Port Dickson and Hospital Kuala Lumpur. Three distinguished judges - Dr Mohd Rohisham Zainal Abidin, the Deputy National Head of Service; Datuk Dr Asmil Farid Zabir from Prince Court Medical Centre and Professor Dr Karis Misiran from Universiti Technologi Malaysia selected Hospital Kuala Lumpur as the winner, Hospital Sultanan Maliha Langkawi as the first runner-up and Hospital Serdang as the second runner-up.

From the videos of multi-talented anaesthesiologists, we moved on to test their white and grey matter for knowledge and speed. A total of 158 MSA members signed up for the online quiz with 20 questions prepared by Professor Dr Rafidah Atan from University of Malaya based on the history of anaesthesia, clinical and current anaesthetic related knowledge. The top five winners (brilliant anesthesiologists under cover) were as listed below.



Next, we had the announcement of the most awaited results for the Virtual Run that was organised by Dr Kevin Ng from University of Malaya. For two weeks from 1st to 15th October 2021, hospital staff and members of the public pledged their runs to registered hospitals. Attractive cash prizes were awarded to the leading hospitals - ***Hobin Jang Hobin*** Hospital Tuanku Ja'afar Seremban (Winner), ***The A Team*** University Malaya Medical Centre (1st Runner-Up) and ***Starlight Army*** Hospital Angkatan Tentera Tuanku Mizan (2nd Runner-Up). Congratulations and well done to all participating hospitals and the top 100 runners!

The last event was the launch of the MSA Year Book 2020/2021 and the upcoming anaesthesia journal by Associate Professor Dr Azrina bt Md Ralip from International Islamic University Malaysia and our MSA President, Professor Dr Ina Ismiarti Sharifuddin from University of Malaya respectively. **"Evolution and Revolution"** was selected as the theme for the MSA Year Book this year to emphasize how anaesthesiology as a medical field has progressed with times. Interesting articles such as Artificial Intelligence (A.I.) versus humans, burnt-out and the human factors will surely appeal to all MSA readers. In the near future, we will look forward to having local articles published in our own anaesthetic journal. Professor Dr Ina presented the front cover of the Malaysian Journal of Anaesthesiology and encouraged everyone to browse through myja.pub for the latest updates.

Alas, the virtual celebration came to an end and Dr Mohd Azizan wrapped up all the interesting activities. Heartiest congratulations to all the winners and participants and big thank you to the Organising Committee led by Dr Gunalan for another year of successful NAD celebration!

My National Anaesthesia Day 2021: KPJ Pahang Specialist Hospital

by Dr Haslan Ghazali
KPJ Pahang Specialist Centre

It all started when Dr Siti Sarah Seri Masran, our only resident ophthalmologist, asked me about the plan for this year's Anaesthesia Day celebration. She was really intrigued with our National Anaesthesia Day celebration we had in KPJ Pahang last year. World Sight Day falls on 14th October every year, two days ahead of our Anaesthesia Day. She asked me about the possibility of a joint celebration and I agreed. Thus, began our collaboration for this year's event. The theme for the National Anaesthesia Day this year is 'Teamwork: Stronger Together' and the theme for the World Sight Day is 'Love Your Eyes'.

As we were still amidst the COVID pandemic, most events were conducted virtually through social media platforms or meeting applications. Unlike last year's celebration with exhibitions and games, a virtual event will be without much physical interaction. So, we quickly put on our thinking caps and started work on our event. As it was done on a smaller scale and virtual, the organizing committee consisted mainly of the marketing department personnel of the hospital. They were experienced in conducting virtual events.

This year, the World Sight Day and National Anaesthesia Day of KPJ Pahang Specialist Hospital was held in the marketing department where we recorded the event in front of a big green screen. There were several activities lined up. We had publicized the event via Facebook and through Whatsapp groups of KPJ staff. It was held via the 'KPJ Pahang Anaesthesia Day' Facebook page and Google meet. We started our event at 9.00am sharp with myself as the Master of Ceremony. We had Dr Mohd Ashri Ahmad one of my anaesthesia colleagues, to recite the doa'. This was followed by the opening speeches by the Medical Director, Dato' Dr Khaled Mat Hassan; the Chief Executive Officer, Tuan Haji Yasser Arafat; Head of Department of Anaesthesia, Dr Lukman Mohd Mokhtar and also Head of Department of Ophthalmology, Dr Siti

Sarah Seri Masran. After the speeches, guests were shown a short video montage of the Anaesthesia and Ophthalmology Departments of KPJ Pahang. At about 10.00am we had a 'Meet the expert' forum conducted by Dr Siti Sarah and I. We talked about our role in patient care especially on the teamwork spirit in the operating theatre. We also touched about the celebration and what it meant to us. We also entertained a lot of questions pertaining to our clinical expertise. This lasted for about

an hour. We wished we had more time to answer questions from the viewers. This was followed by an online virtual quiz competition which was organized by the marketing team using the Kahoot! application. Questions were provided by Dr Siti Sarah and I. It was lots of fun and the staff enjoyed themselves. Kudos to the marketing team.

At the end of our half day event, we announced the winners for the TikTok competition. Money and small tokens were given away as prizes. The last event which everyone was looking forward to was the lucky draw. We had sold T-shirts commemorating the event and the buyers were entitled to the lucky draw. There were 30 prizes in total including two bicycles and a smart phone. Everyone had fun and despite it being virtual, I think it was an interesting experience organizing it. Next year I hope it will be a much grander event when life will be back to normal and we can have our usual gatherings. Let's hope for the best.

SCAN ME

Click on link below or QR code
to watch the recorded event on FB
https://www.facebook.com/Anaesthesia-Day-KPJ-Pahang-214283817247815

Teamwork - I love our team
National Anaesthesia Day 2021, UMMC

by Dr Ng Jia Hui & Dr Zamirah Basher
University Malaya Medical Centre

National Anaesthesia Day falls on 16th October annually. This day is a remembrance of the first successful demonstration of anaesthesia back in the 18th century and it is one of the most remarkable times in the medical world, indicating patients will be able to experience painless surgical procedures since then. It is a memorable day celebrated by anaesthetists globally.

For the past few years, the Department of Anaesthesiology in University Malaya Medical Centre (UMMC) has held various interesting events to commemorate this auspicious day. Unfortunately, due to the COVID-19 pandemic this year, we chose to hold the entire celebration virtually. Yet, we are glad to say that it was indeed an amusing and successful event.

We selected 'Teamwork - I love our team' as the theme of celebration this year, as it is a reminder to us that unity is stronger than solitude. There was a total of 75 participants in the online event. It started with a welcoming speech from our beloved head of department, Associate Professor Dr Loh Pui San. She expressed deepest gratitude to all the healthcare workers from our department as well as the deployed staff, all of whom held pivotal roles in the intensive care of the sickest COVID-19 patients, as we tirelessly pulled through the busiest of the days and countless sleepless nights. As a chain is no stronger than its weakest link, teamwork is the utmost important factor leading to the success of our services.

Fighting the COVID-19 pandemic was not a bed of roses and our ICU was one of the most heavily hit units. Our intensive care team was resilient in handling the huge surge of Category 5 COVID-19 patients to the unit.

Head of Department, Associate Professor Dr Loh Pui San presenting certificates to doctors from left to right: Dr Athirah binti Aminudin (Department of Ophthalmology), Dr Wan Aizat bin Wan Zakaria (Wellness Team Leader, Department of Anaesthesiology) and Dr Mohd Fitry bin Zainal Abidin (OSHE Team Leader, Department of Anaesthesiology)

We could not be more grateful for the lending hand from all the doctors and nurses of other departments when we needed it most. This further shows the importance of team-play as portrayed by the theme this year. As a token of appreciation, we took the opportunity to present the deployed staff with certificates and souvenirs. In addition to that, we had special thanks to the wellness team, led by Dr Wan Aizat, in ensuring the mental and physical health of our departmental staff are well taken care of during the fight with the pandemic. We also thank our department OSHE team, which is led by Dr Fitry, who tirelessly traced members of staff who were in close contact with COVID-19 positive patients in order to reduce spread of disease among staff to the minimum.

To spice up the event, we had a TikTok competition with the theme of 'teamwork' open to all the UMMC staff. We were pleased to receive many entries and the panel of judges had a hard time deciding on the winners as the entries were all equally fascinating. The winners were announced during the event and they won cash prizes.

The virtual National Anaesthesia Day 2021 celebration ended with the launching of the Department of Anaesthesiology alumni group. Packed lunch and dessert were also provided to all the staff at the end of the event.

Despite being an online event and we could not celebrate as a team physically, it was still a fun and exciting day. Last but not least, utmost gratitude to all the frontliners for their sacrifice during this tough time. Let us hope that we can celebrate this special day face-to-face in the future when the pandemic is over.

Hosting the First Ever Virtual Pre-Entrance Anaesthesia Workshop

by Dr Nor Fadhilah Shahril & Professor Dr Ina Ismiarti Shariffuddin
University Malaya Medical Centre

The pandemic has impacted all aspects of our lives, including the way we work, learn, and communicate. The entrance examination is an integral part of selecting the best candidates for the medical specialist postgraduate programmes. It is currently run by the MedEx (Medical Specialist Pre-entrance Examination) in collaboration with the National Anaesthesiology Specialty Committee. It is made available to candidates all over Malaysia through a unified online registration portal and multiple examination centres. However, as the pandemic continues, there are concerns that many medical officers are struggling to better prepare themselves for the exams to balance their role as frontliners and to acquire formal accreditation to enter the postgraduate programme, especially for the aspiring medical officers who are due to sit for the entrance exams in the year 2022.

To address this challenge, University of Malaya has recently taken the initiative to host the first virtual pre-entrance anaesthesia exam workshop in Malaysia. Professor Dr Ina Ismiarti Shariffuddin led the organising committee with Associate Professor Dr Loh Pui San, Associate Professor Dr Noorjahan Haneem Md Hashim, Dr Nor Fadhilah Shahril, Dr Farah Nadia Razali, Dr Muhammad Syamel Aizad Mohd Amin, Dr Iwadh Abd Rashid, and Dr Ng Jia Hui as committee members. We were proud to have our own technical and IT support delivered by Dr Syamel and Dr Iwadh.

Held over Zoom platform over two weekends on the 14th - 15th and 21st - 22nd August 2021, the workshop provided an overview on basic physiology and pharmacology - two major key subjects examined in the Part 1 examinations of Masters in Anaesthesiology. The workshop also prepared participants with the exam standards and the opportunity to directly engage with the National Conjoint Examination Board examiners to understand the programme better. In total, this workshop attracted over 280 candidates from all over Malaysia, including Sabah and Sarawak.

The esteemed Physiology subject speakers were Professor Dr Chan Yoo Kuen, Professor Dr Rafidah Atan, Professor Dr Nor'azim Mohd Yunos, and Dr Jeyaganesh A/L Veerakumaran, who introduced basic physiology during the first weekend. The Physiology topics presented were cardiovascular, respiratory, central nervous system as well as renal physiology. A well-executed series of physiology lectures certainly enlightened the participants. The Pharmacology subject speakers were Associate Professor Dr Noorjahan Haneem Md Hashim, Professor Dr Ina Ismiarti Shariffuddin, Professor Dr Marzida Mansor, Associate Professor Dr Loh Pui San, and Dr Kevin Ng Wei Shan. The topics covered were intravenous induction agents, inhalational agents, analgesics, muscle relaxants, and local anaesthestics. The series of lectures indeed was an eye-opener to the participants. The participants submitted their questions and interact with the speakers via a chat box, albeit an online webinar. In addition, we had a real-time single best answer polling in the lectures to better engage the participants which received good feedback.

At the end of the workshop, online feedback was sought from the participants, and the majority rated the workshop as very helpful in preparing for the entrance examination (Figure 1). They highly rated the speakers to be well organised and prepared (Figure 2) and the sessions to be well planned (Figure 3). After the workshop

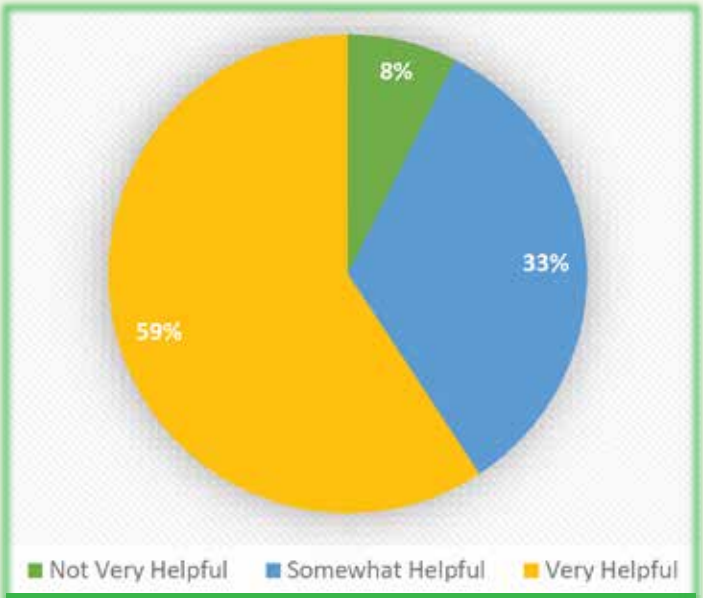


Figure 1: How helpful do you think this workshop is for your preparation of entrance examination?

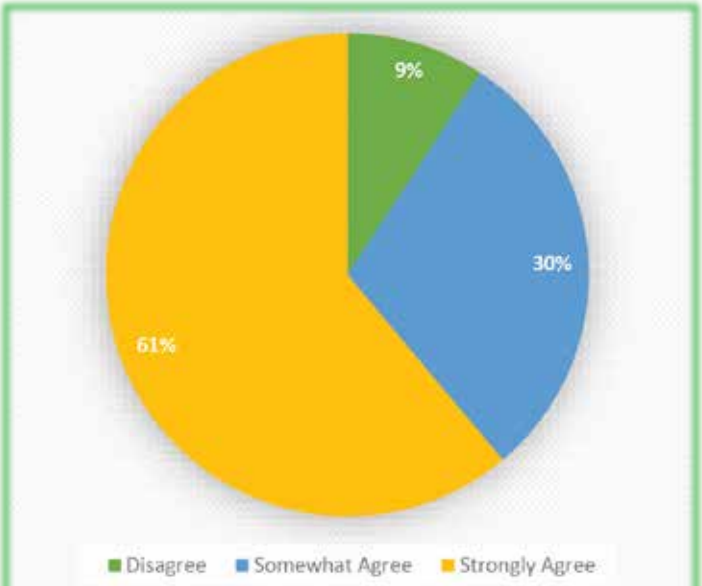


Figure 2: The speakers were organised and well prepared for each topic.

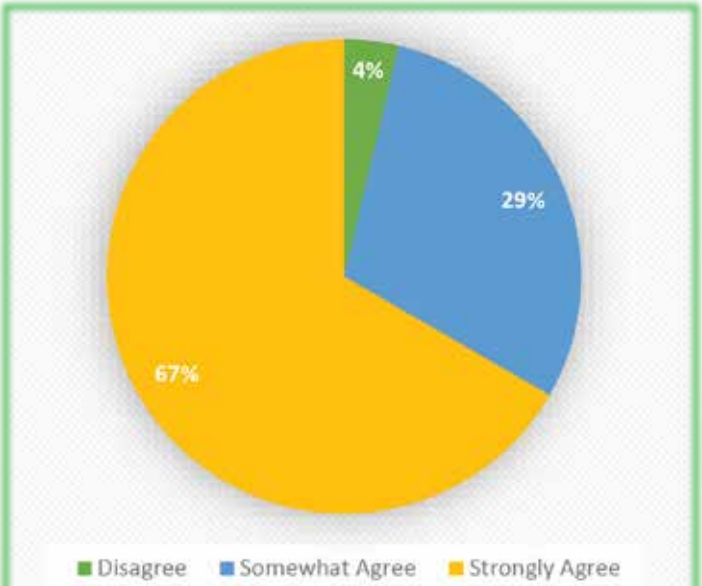


Figure 3: The course contents were organised and well planned.

concluded, session recordings were made available to participants for the next three months on University of Malaya Anaesthesiology Department website. To improve the quality of our education, we created a platform for the participants to assess their level of performance by answering the pre-test and post-test questions for both Physiology and Pharmacology topics. We are happy to note that the score for the post-test improved after the course.

We faced some challenges as the organising committee was also heavily involved as frontliners in treating patients with COVID-19. It was around the peak of the pandemic when our hospital was running three COVID ICUs. With a dedicated team, we managed to execute this task after getting approval from the Anaesthesiology National Conjoint Board in just about four weeks.

Among the lessons learned was the availability of different social media platforms such as Facebook and Instagram to reach out and advertise our workshop to the potential participants in a short period. On the other hand, the Telegram app provided a centralised messaging system to better facilitate the participants and respond to queries or technical difficulties during the workshop.

Overall, the organising team feels honoured and grateful to help our fellow medical officers further their education journey. The team also gained a lot of knowledge in managing the event while fulfilling our roles as frontliners in the operating theatres, general ICU, and COVID ICUs, and some while being under home quarantine.

We would like to thank the speakers who made the webinar more insightful and finally, the participants who made our effort worth taking. We hope to organise similar sessions in the future and wish our future anaesthesiology candidates the best of luck and see you on the field soon!

Basic Transesophageal Echocardiography for Anaesthesiologist

by Dr Hasmizy Muhammad
Pusat Jantung Sarawak

Introduction

Transesophageal Echocardiography (TEE) is used by Cardiothoracic Anaesthesiologists in this country for perioperative monitoring of cardiac performance, assist with surgical decision-making, evaluation of surgical repairs and assessment of patient's hemodynamic at cardiothoracic intensive care unit. Recently, TEE use has been expanded to other anaesthesia sub-specialties. It is used for the detection of venous air embolism and patent foramen ovale in neurosurgery, evaluation of pericardial effusion and compression of the cardiac chambers in liver transplantation, and diagnosis of cardiovascular pathology that may cause intraoperative hemodynamic, pulmonary, or neurologic compromise. TEE is also used to supplement Transthoracic Echocardiography (TTE) in the intensive care unit for diagnosis and management when the latter is unable to obtain the necessary images.

Indication for Basic TEE Application

TEE offers a wide range of applications in clinical practice. However, for basic TEE, the main indication is monitoring of the cardiac and adjacent structures such as ventricular size and function, valvular anatomy and function, volume status, pericardial and pleural abnormalities, and great vessels that may cause hemodynamic or ventilatory instability.

Safety of TEE

Although TEE is generally safe, the complications can occur either by the probe itself or during the probe placement procedure. Thermal pressure injuries, compression of the structures proximal to the esophagus, and soft tissue damage in hypopharynx, esophagus, and stomach are some of the probe-related complications. Circulatory complications such as hypertension, hypotension and arrhythmias, and pulmonary difficulties i.e. laryngospasm, bronchospasm, hypoxia are examples of procedure-related complications.

TEE Probe System

At the tip of TEE probe, there is a phased array piezoelectric crystal, which function both as the transmitter and receiver of ultrasonic waves. The standard probe connector is plugged and locked into the machine slot. The handle contains two control wheels and array rotation multiplane buttons. The probe position and orientation can be changed by manoeuvring the probe using the two control wheels. The large wheel flexes the tip of the probe anteriorly (anteflexion) and posteriorly (retroflexion). The small wheel allows for lateral flexion or side-to-side movement of the tip. The array rotation buttons turn the multiplane angle from 0 to 180° as piezoelectric elements can be electronically rotated either clockwise or counter clockwise. Since TEE requires less depth penetration, it uses higher frequency transducers between 5 to 7 MHz.

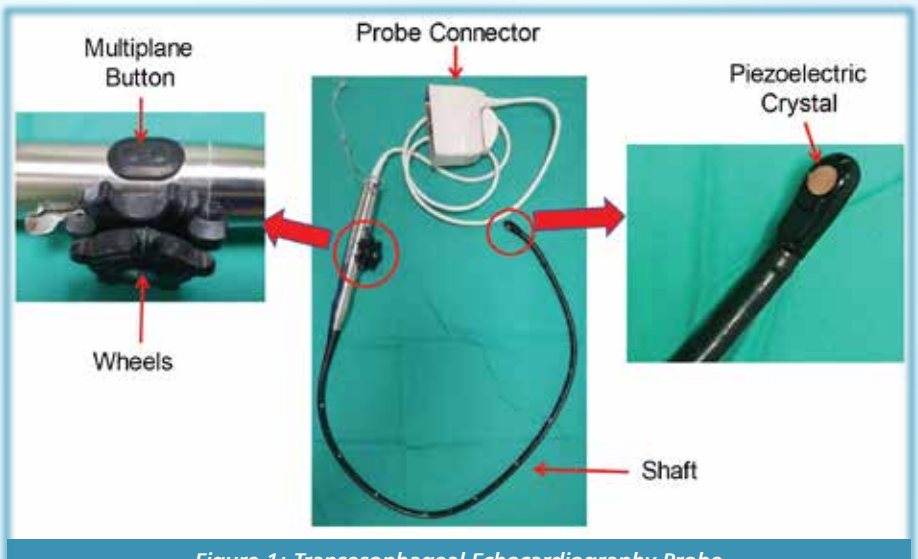


Figure 1: Transesophageal Echocardiography Probe

TEE Probe Position

There are four TEE probe placement position in TEE examination which are at the upper esophageal (UE), the mid esophageal (ME), the transgastric (TG) and the deep transgastric (DTG) levels. The distance of the probe tip from lips is approximately 20-25cm for UE, 30-40cm for ME, 40-45cm for TG and 45-50cm for DTG. In basic TEE examination, the TEE probe is usually positioned at UE and ME levels.

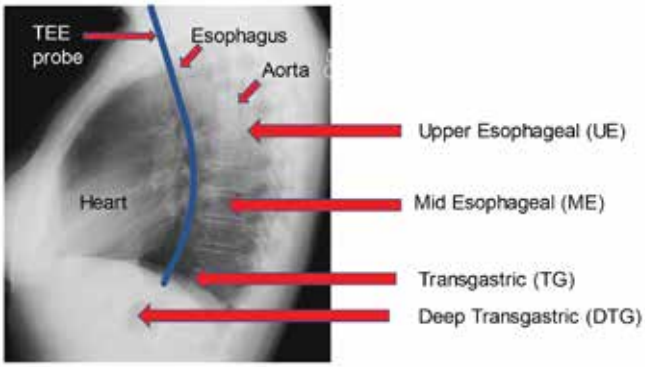


Figure 2: Lateral chest x-ray show positions of the heart, TEE probe, esophagus and aorta. Arrows indicate the positions of the TEE probe at upper esophageal (UE), mid esophageal (ME), transgastric (TG) and deep transgastric (DTG)

TEE Probe Manipulation

The position and orientation of the TEE probe can be altered by several types of manipulation (Figure 3):

a) "Advancing" is pushing the tip of the probe distally toward the stomach while "withdrawing" is pulling the tip in the opposite direction proximally.

b) "Turning to the right;" is rotating the anterior aspect of the probe clockwise toward the patient's right while "turning to the left" is rotating the probe counter clockwise.

c) Axial rotation of the multiplane angle from 0° toward 180° is called "rotating forward," and rotating in the opposite direction toward 0° is called "rotating back".
   i. At **0 degrees** the transducer beam is **transverse**
   ii. At **90 degrees** the transducer beam is **longitudinal**
   iii. At **180 degrees** the transducer beam is **transverse** (mirror image of 0 degrees)

d) Flexing the tip of the probe anteriorly with the large control wheel is called "anteflexing" and flexing it posteriorly is called "retroflexing".

e) Flexing the tip of the probe to the patient's right with the small control wheel is called "flexing to the right," and flexing it to the patient's left is called "flexing to the left".

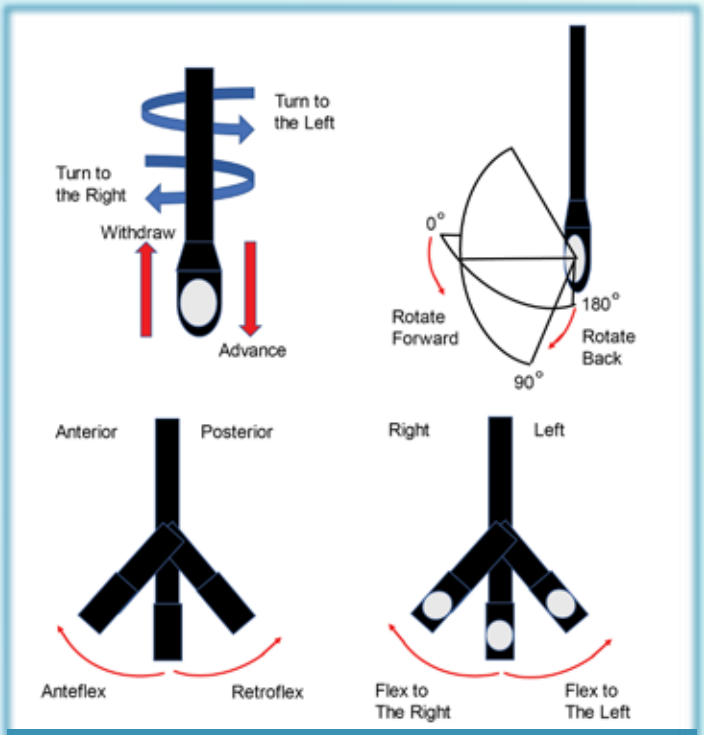


Figure 3: Terminology used to describe the manipulations of the probe and transducer during image acquisition

Basic TEE Views

Basic TEE examination emphasizes on the 11 most important views, which can provide the necessary information for diagnosing the aetiology of patient's hemodynamic instability.

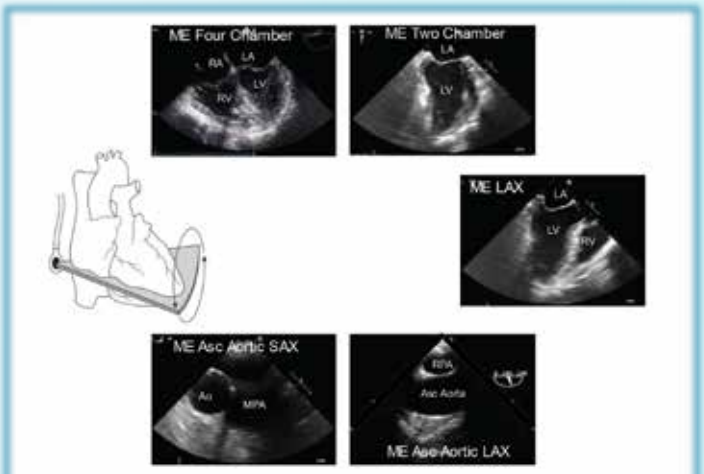


Figure 4: Transesophageal views at mid esophageal level. Start (clockwise) with the four-chamber view (angle: 0-10°), two-chamber view (angle: 80-100°), long axis (LAX) view (angle: 110-130°), ascending aortic long axis view (angle: 100°) and ascending aortic short axis (SAX) view (angle: 10-30°)

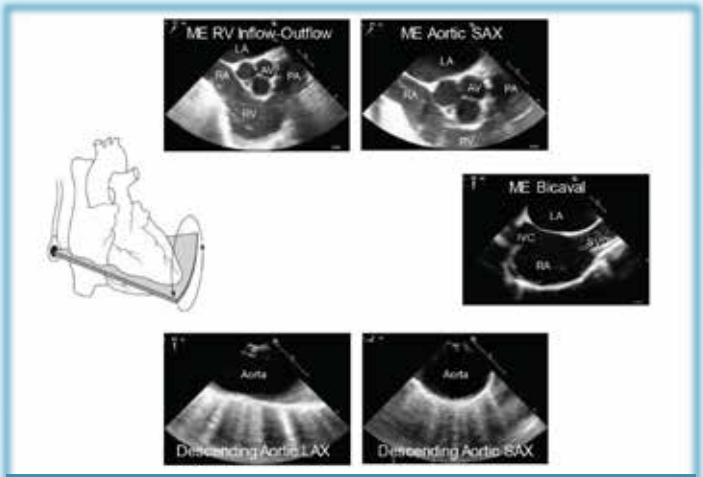


Figure 5: Transesophageal views at mid esophageal level. Start (clockwise) with the right ventricle inflow-outflow view (angle: 50-70°), aortic short axis view (angle: 25-45°), bicaval view (angle: 100-110°), descending aortic short axis view (angle: 0°) and descending aortic long axis view (angle: 90°)

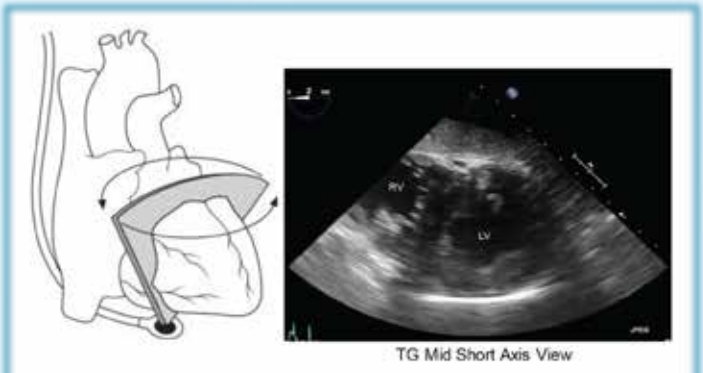


Figure 6: Transgastric short axis view at midpapillary level (angle: 0°)

Information gathers from Basic TEE

The basic information obtained from TEE:

a) Assessment of global LV function by visual estimation of systolic function, and assessment of regional LV function by evaluation of 17-segment wall motion from the ME four chamber, ME two-chamber, ME LAX and TG midpapillary SAX views.

b) Assessment of RV function by visual estimation of RV systolic function.

c) Assessment of volume status and monitoring fluid therapy response by obtained LV end-diastolic diameter and LV end-diastolic area in the TG midpapillary SAX view.

d) Assessment of valvular regurgitation and stenosis at Aortic valve (AV), Mitral valve (MV), Tricuspid valve (TV), and Pulmonary valve (PV). Colour flow Doppler with visual inspection of regurgitant jet area within the receiving chamber and vena contracta width able to differentiate mild, moderate and severe degrees of regurgitation while visualizing leaflet motion and using continuous-wave Doppler (CW) through the valve able to provide severity of valvular stenosis.

e) Assessment of Pulmonary Embolism (PE) although TEE has low sensitivity for direct visualization of a thrombus in the pulmonary artery. TEE findings consistent with acute PE are RV dilation and RV hypokinesia.

f) Assessment of Venous Air Embolism (VAE). Basic TEE provides real-time data and a visual quantification of VAE and detection of right-to-left shunts.

g) Assessment of Pericardial Effusion and Thoracic Trauma as basic TEE offers a rapid, accurate diagnosis of pericardial effusions, traumatic aortic injuries, and cardiac contusions although visualization of the distal ascending aorta and aortic arch are limited.

h) Assessment of patent foramen ovale and secundum atrial septal defect (ASD) by using colour flow Doppler imaging in the ME bicaval view as the defect in the interatrial septum.

Conclusion

Basic TEE has distinct advantages over conventional TTE in certain clinical circumstances and can be used as non-invasive hemodynamic monitoring tools either in the operation theatre or intensive care unit.

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Virtual Basic Critical Care Management Course for non-ICU Doctors (VBCCM) 2021

by Dr Chan Weng Ken
Hospital Umum Sarawak

Virtual Basic Critical Care Management Course for non-ICU doctors (VBCCM) was held successfully on the 31st July 2021, as a full day webinar on YouTube, jointly organised by Hospital Pakar Kanak-Kanak, Universiti Kebangsaan Malaysia (HPKK), MERCY Malaysia (MERCY) and *Persatuan Kakitangan Anestesiologi Hospital Umum Sarawak* (PEKA-HUS). VBCCM has successfully garnered more than 2000 participants live on both the Zoom Meeting platform and on MY-sigRA's YouTube channel.

VBCCM was initiated in late July 2021 when the COVID-19 pandemic situation worsened in Malaysia, especially in the Greater Klang Valley. From the official statistics shown in https://covidnow.moh.gov.my, there were about 900-odd ventilated patients and over 1500 patients being managed in intensive care units (ICUs) by the end of July. There was also news that patients were stranded in emergency departments due to the congestion in wards. As such, many patients who required intensive care were being managed in repurposed ICUs. There were also clinicians from other departments who were mobilised to help to cope with the surge of patients with COVID-19 categories 4 and 5.

HPKK was a new training hospital used by the Ministry of Health, Malaysia (MOH) through powers under Section 3 and 4 of the Emergency Ordinance to help to meet the increasing demand of patients requiring critical care. However, many staff were mobilised from other hospitals and many of them had very limited experience in managing critically ill patients.

To address all the clinical shortcomings and with aims to improve patient care, the idea of VBCCM was mooted by a group of young anaesthesiologists to provide a quick and comprehensive training for non-ICU doctors in HPKK and to other hospitals in Malaysia as well.

However, there were a few challenges that needed to be addressed:

1. *Speakers* - Many clinicians in MOH hospitals were heavily engaged in managing the surge crisis; hence, the decision to invite speakers from less affected MOH hospitals and voluntary bodies (MERCY Malaysia).

2. *Platform (Zoom & YouTube)* - Since the start of pandemic, many educational activities have transitioned to online learning. The initial plan to use a pro account in Zoom had to be escalated due to the account limitation (limited to 100 participants, lack of webinar function and unable to stream to social media) in view of the increasing number of participants. Subsequently, transition was made to use an education account in Zoom. However it was not enough as the number of registered participants was over its limit of 300 participants too. Fortunately, the Malaysian Special Interest Group in Regional Anaesthesia (MY-sigRA) has agreed to offer their YouTube channel for live streaming purposes. Hence, we were able to reach out to over 2000 participants (at one point, it was about 2500 online viewers).

3. *Notification* - As the transition to stream live at YouTube was made at the eleventh hour, we had to notify our participants promptly. Since there was no official website or official social media channel, we had to rely on email notifications and word of mouth via Whatsapp messages. Although there were some congestion on the Zoom platform on the morning of event, eventually most of the participants were successfully diverted to the YouTube channel.

4. *Time constraint* - The time from decision made to the event date was only a week. Our invited speakers had only a few days to prepare their presentations. Despite that we managed to have positive feedback for the lectures and many requested for the recorded version of the lectures. These lectures were subsequently uploaded in MY-sigRA's YouTube channel for future viewing. As we do not have adequate time to request CPD points from the MMA, HPKK Corporate Communications Services has agreed to issue certificate of participation to all the online delegates.

On the day of the event, we were privileged to have Dr Melor bin Mohd Mansor, our then National Head of Anaesthesia and Intensive Care Services and Head of Department of Anaesthesiology and Intensive Care, Hospital Kuala Lumpur to grace the opening ceremony. Our participants started to show up as early as 8.45am (15 mins earlier) to secure limited places in the Zoom platform. Our speakers on that day were Dr Mafeitzeral Bin Mamat (MERCY), Dr Tham Sook Mun (Hospital Queen Elizabeth I), Dr Vincent Teo Shih Loong (Hospital Segamat), Dr Vimal Varma (Hospital Sultanah Aminah),

Dr Siew Gee Ho (HPKK & Hospital Miri), Dr Shahridan Bin Mohd Fathil (MERCY), Dr Lee Yew Ching (Hospital Serdang), Dr Hetty Ayuni binti Sulaiman (Hospital Umum Sarawak), Dr Yang Wai Wai (HPKK) and moderators Dr Choo Mei Ann (Hospital Sungai Buloh) and Dr Leong Ai Leng (Hospital Selayang).

Throughout the course, the chemistry among the organising committee was fantastic and was noticeable especially during the live Questions & Answers segment of each lecture. Each of us from behind the scenes was helping to answer all the burning questions from participants both via live and in the chat section at Zoom and YouTube. We were also glad that there were some good Samaritans who had volunteered to answer our participants' questions via the chatbox when we were busy sorting out issues behind the scenes. Although there were technical hiccups in the beginning, these were all sorted out promptly to prevent delay to each section.

Picture 1: Our initial flyer prior to last minute changes

Overall, at the end of the day, we garnered mostly positive feedback from the participants as this course helped them to understand better and improve their knowledge in management of critically ill patients. Many had also requested for recording of the event and MY-sigRA had again graciously allowed them to be uploaded online on their YouTube channel. These can be accessed at https://www.youtube.com/c/MYsigRA under 'Critical Care Management Course for Non-ICU Doctors' playlists.

We were glad that VBCCM played a role during this pandemic especially in helping our junior doctors and non-ICU trained clinicians to manage the critically ill patients with COVID-19 during the surge crisis. This course was subsequently made into a compulsory introductory course during orientation week for the House Officers who came to HPKK for their COVID rotation. Looking back, I am touched as this might be one of the times when clinicians from various disciplines get together to show their support during this pandemic crisis.

#kitamestimenang

Ps.: The author would like to express his gratitude to Professor Dr Tang Swee Fong (Deputy Director of HPKK) to allow us to organise this course, Dr Melor bin Mohd Mansor for gracing the event, Dr Teo Shu Ching (PEKA-HUS) for the support, Dr Azrin Mohd Azidin, Convenor of Malaysian SigRA for permission to use their YouTube channel, Dr Muhammad Amir Ayub, who manages MY-sigRA YouTube channel, Mr Yazeed (IT department of HPKK) for the webinar technical support, and Ms Lia (HPKK Corporate Communications Services) for the certificate preparations.

Picture 2: Post event group photo of the organising committee

Neuroanaesthesia Symposium (NAS) 2021

by Dr Elisha Culas & Dr Peter Tan
Hospital Umum Sarawak

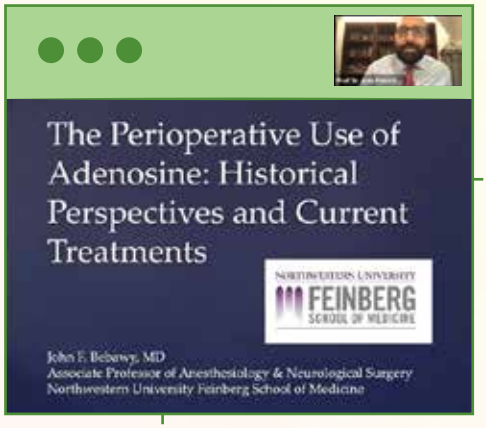
The first virtual edition of Neuroanaesthesia Symposium (NAS) was held on 3rd and 4th July 2021 which was jointly organised by the Special Interest Group (SIG) in Neuroanaesthesia, College of Anaesthesiologists, Academy of Medicine of Malaysia; Malaysian Society of Anaesthesiologists (MSA) and Persatuan Kakitangan Anestesiologi Hospital Umum Sarawak (PEKA-HUS). This virtual event received an overwhelming response of 422 registered participants nationwide.

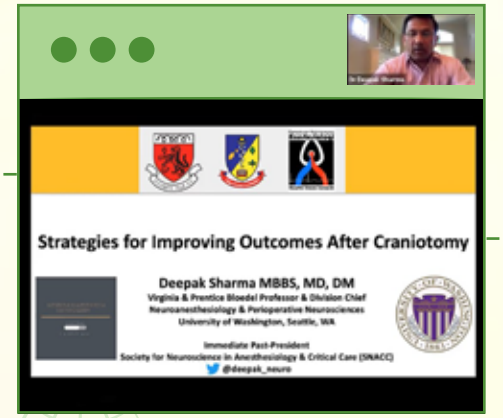
The programme was well-crafted with topics related to the current trends in perioperative neuroscience which consisted of four plenary lectures, five mini symposia and two lunch symposia. The invited overseas speakers were Associate Professor Dr John Patrick F Bebawy (USA), Professor Dr Deepak Sharma (USA), Dr Judith Dinsmore (UK) and Professor Dr Matthew Chan TV (Hong Kong, China) whereas the local faculties were mainly the neuroanaesthesiologists and neuroanaesthesia fellows from the SIG.

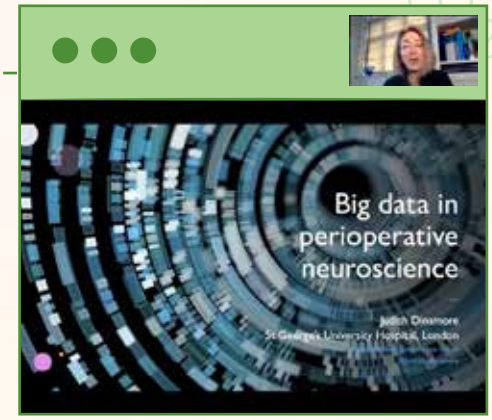
A virtual exhibition was also set up to allow the participants to keep abreast of the latest products and services in the field of anaesthesiology. Seven companies from the biomedical industry participated in this exhibition.

The organising committee held an online survey at the end of the symposium to assess the delegates satisfaction in terms of the secretariat work, virtual platform, time management, lectures and their general overall experience. We are proud to report the survey concluded that the NAS 2021 had met the expectations of the delegates in all categories mentioned above.

It was a challenging experience for the organising committee and the delegates, as we head into an era of virtual meetings due to the COVID pandemic. With the excellent feedback gained through the NAS 2021, we strive to make the upcoming Virtual Neurocritical Care Conference on 1st to 3rd July 2022 a success.







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The MY sigRA YouTube Channel

by Dr Muhammad Amir Ayub
Hospital Kuala Lumpur

There was a problem of obsolete technology when RA Asia 2017 symposium was recorded and published on a DVD format. This had made many people unable to view this on the DVD format. That was when Dr Azrin Mohd Azidin and Dr Amiruddin approached me in June 2020 regarding this issue. I have always had my own personal YouTube channel https://www.youtube.com/c/anakayub, which was never successful despite it being more than a decade old. That channel has all of the videos I had ever produced in my life, of which the majority is not anaesthesia-related content. When initially approached for help, I ripped out the contents, edited, transcoded and republished those videos as separate cuts on my personal YouTube channel. But then issues came about: myriad audio issues, recorded stuff that the public did not need to see, censorship issues, and many others.

I then self-educated myself the knowledge and skills related to those problems and many others related to video production to improve on what was initially just a change in the publishing format. This was admittedly an extension of my self-education when I started my personal YouTube channel.

It was soon suggested that we have the content published on a dedicated channel, but still managed by me. A logo was already worked on by Dr Herna. That was how the MY sigRA (Malaysia Special Interest Group in Regional Anaesthesia) YouTube channel https://www.youtube.com/c/MYsigRA started: as a channel to put our very own local regional anaesthesia educational content.

The type of content has evolved into more complex work since from recorded slide presentations, online lectures & symposiums to procedural videos. What was supposed to be exclusively regional anaesthesia content has also been deviated from slightly; with ICU-related content published in the wake of non-ICU doctors being deployed to work in the ICU when COVID-19 ravaged across the country. Our first material came via YouTube livestreaming (with the channel being the streaming host for the organisers), reaching a couple of thousand viewers at one point.

The channel. Take note that procedural videos are most popular

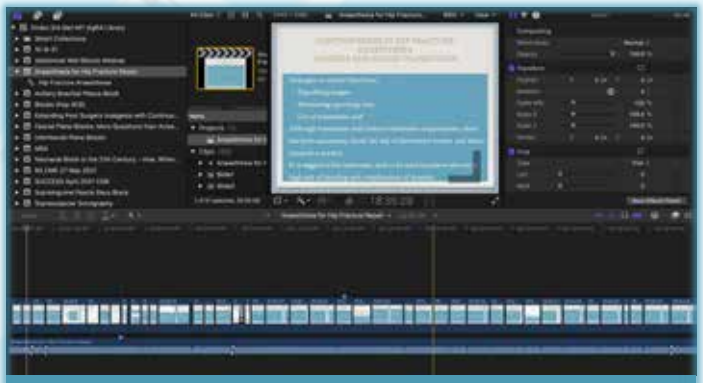
Video making, even for a short video clip, is hard and long work. Some may argue that getting the audio right is more important than the video. The shortest work time is probably 1.5 times the duration of the final, equalling the time to listen and edit the audio *without* doing any video edits. Work with poorly recorded audio *(you don't want to hear it)*, and the work time may triple the clips' duration. Getting a good room to record in with the right audio setup is an essential aspect of recording our lectures and narrations.

Add in video edits, and if we are working on original procedural videos, scripting, debating (direction and medical facts), shooting, narrating, special effects. You will get the picture that it is not easy for a one-man editing machine (there is usually help in shooting and getting other recorded video clips). Let us not forget that we are producing medical educational material of which it has to be correct. Starting out, production of that anterior QL video probably took around 30-man hours; subsequent productions took much less time as my skills improved and a proper workflow was formulated (you need to treat the production exactly like producing a movie).

What about equipment and workflow? Most of the shooting for our original procedural videos were shot just on iPhones (they are pretty good), sometimes with accessory lenses. Footage from ultrasound machines were obtained either via the machines' built-in video recording

or via streaming to my laptop with a HDMI capture device (subsequently recorded via a streaming app, in our case OBS). Even though our most popular video, the anterior quadratus lumborum block video, had its narration recorded via "just an Android smartphone" (see the importance of the right recording environment), most of our videos have their narrations recorded with either a shotgun (Takstar SGC-598) or a clip-on lavalier (Boya BY-M1) microphone (check out the review of my microphones: *https://youtube.com/watch?v=6SJS-7XJUk0*). It is then edited on my MacBook Pro with Final Cut Pro, working either on the laptop itself or on an external drive. I listen to the audio on my Klipsch X20i earphones to base my edits. Both original footage and the final production videos are archived on external storage. That 2017 ASRA original footage came from 2 DVD's, which amounts to around 9 GB. The current archived footage for MY sigRA altogether right now is around 120 GB, and the amount of archived space to store the footage for Dr Melor's farewell video was 175 GB. That archive does not include storing the final output files, nor projects lost due to glitches in my backup and archive solution/workflow. The former would have been even bigger (especially when editing vs archiving) if not for the relatively powerful computer I have been using to edit from (generally negating the need for a scratch disk). After making the videos public, I would then also promote it on my personal website/blog (*https://www.anakayub.com*) and various social media posts.

Though it is fun work if you are into it, it is not all sunshine. If you are asking, the channel has not made any money. I do hope that with good viewership and



A relatively simple project of a recorded lecture without simultaneous screen recording

A more complex project, which includes finished motion graphics work

My most complex project, though not MY sigRA: https://youtu.be/LwFBjDdWywk and that was not the whole timeline

subscriber numbers, this situation may change. Even though I love doing these IT work, not having any monetary rewards (at least for now) does make it difficult. With a very busy life, time to work on new videos is a premium. Burnout among YouTubers (aka content creators) is an established fact, but those same people are also not doctors, who do not deal with the treatment of patients during COVID times. Hopefully it becomes a sustainable endeavour.

That is all I have to share for now. I hope to share more about my workflow. I have shared my audio workflow on my personal channel here: *https://youtu.be/_Pfr0tCMIdc*. The current project is on how to perform central venous cannulation for junior doctors but, as usual, there are snags. If you are willing to volunteer your internal jugular vein or common femoral vein, you know who to keep in touch. Till next time, please do not forget to subscribe and share!

Ultrasound Guided Vascular Access: Where are we Right Now?

by Dr Hasmizy Muhammad
Pusat Jantung Sarawak

Introduction

Knowledge of surface anatomy is an important prerequisite for vascular cannulation of peripheral and central veins, and arteries. However, failure and complications can occur even in expert hands. Landmark techniques for vascular cannulation are associated with a 60% to 95% success rate. This is evidenced by the number of complications of central venous cannulation either by our own fraternity or other disciplines.

Complications of Central Venous Cannulation

The number of insertion of central venous catheters (CVCs) of the Internal Jugular, Subclavian, and Femoral veins in the United States is reported to be more than 5 million annually, with complication rates ranging from 5% to 19%. The immediate complications of CVC include arterial puncture, haematoma, pneumothorax, haemothorax, chylothorax, brachial plexus injury, air embolism, puncture of the aorta and catheter malposition.

The Clinical Audit Unit, Medical Development Division and the Perioperative Mortality Review (POMR) Committee of the Ministry of Health Malaysia in its POMR eBulletin 2020 reported a case of malposition of a right internal jugular CVC into the posterior of the Superior Vena Cava in an elderly lady with underlying end stage renal failure, after multiple attempts at cannulating the right internal jugular vein with a haemodialysis catheter.

Rationale of Using Ultrasound for Vascular Cannulation

Ultrasound guidance for vascular access has been widely used for the past four decades. It has been shown to improve success rates, reduce the number of insertion attempts, and reduce complications. Ultrasound imaging can differentiate between the vein or artery, identify vascular thrombosis, guard against through-and-through puncture and prevents passage of the needle into surrounding structures.

The National Institute of Clinical Excellence, American Society of Echocardiography, Society of Cardiovascular Anesthesiologists, American Society of Anesthesiologists, American College of Critical Care Medicine, Association of Anaesthetists of Great Britain and Ireland and the European Federation of Societies for Ultrasound in Medicine and Biology have published recommendations and guidelines for ultrasound guided vascular access.

The author using real time ultrasound guidance for a right internal jugular cannulation

Ultrasound Guided Vascular Access Practice in Malaysia

In Malaysia, there are no guidelines or recommendations from medical societies/bodies on the usage of ultrasound for vascular access in clinical practice. Ultrasound has been used for difficult vascular access e.g. in obese patients or after failed multiple cannulation attempts, or in cases of potential bleeding e.g. coagulopathic patients. The usage of ultrasound guidance for CVC placement is influenced by the competency of the operator and the availability of the ultrasound machine. Recently, the use of ultrasound guidance for vascular access in the intensive care unit, operation theatre and wards has increased. There is no structured training for ultrasound guided vascular access in our postgraduate Anaesthesiology programme. The trainees gain the necessary knowledge

and skills from either workshops or during on-the-job training in their hospitals.

Steps to Enhance Ultrasound Guided Vascular Access Programme in Our Fraternity

a) Special Interest Group in Ultrasound (SIG)

The College of Anaesthesiologists, Academy of Medicine of Malaysia has taken initiatives to improve and enhance the usage of ultrasound in anaesthesia and intensive care services in the country by setting up the Special Interest Group in Ultrasound in 2020. The main focus of the Ultrasound SIG is to propagate the use of ultrasound in our fraternity.

b) Systematic Education Program

A standardized training incorporating knowledge on ultrasound and vascular anatomy, followed by a combination of simulation-based practice and supervised cannulation on patients is essential to promote a safe central venous cannulation practice throughout the country. Such programme can be organised by the Special Interest Group in Ultrasound, College of Anaesthesiologists and the Malaysian Society of Anaesthesiologists.

c) Practice Guideline for Ultrasound Guided Vascular Access

Practice guideline is intended to provide our fraternity with a standard protocol for the performance of Ultrasound Guided Vascular Access. The guideline should state the minimum criteria for the safe performance of Ultrasound Guided Vascular Access.

Ultrasound guided vascular access simulation on a training manikin

Conclusion

The routine use of ultrasound for vascular access is still lacking. While the availability of the ultrasound machine especially in the district hospitals is the main obstacle, the competency of the operators also needs to be addressed. Continuous education on ultrasound guided vascular access either during workshops or on-the-job training will improve patient safety in the future.

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MCAI/FCAI - The Road Not Taken...

by Dr Noreen Louis
Institut Jantung Negara

The memorandum of understanding (MoU) between the College of Anaesthesiologists, Academy of Medicine of Malaysia and the College of Anaesthesiologists of Ireland was officially signed on 27th April 2016. That was the starting point where the parallel pathway for eager learners of Anaesthesia and Intensive Care was paved. Even so, all that glitters is not gold and the epitome of uncertainty, discreditation and exam stigma was all too overbearing. There were many who rushed headfirst into the exams and then gradually withdrew as there was a lack of response, scarcity of experience and infrequent availability of 'role models'.

From my perspective it was like dipping your toes into water to test and see if you are ready to go in, as the water may be too warm or too cold at first but that is not a reason to shy away from it. The positives may far outweigh the negatives, as it did for me. This course is not for the faint hearted. It relies upon one's efforts at signing up for local and overseas courses as well as finding study partners who may hail from different hospitals, some of whom were perfect strangers prior to that. This is done while also holding on to the grit of pushing through despite the many factors that could delineate a person from his/her path at any one time. Finding superior colleagues at work who would genuinely support you was another task of its own but truly you would come to realise that great men are also generous and they are the very few who would inspire you that true teachers are both wise and enlightened.

As the Greek philosopher, Heraclitus, said 'change is the only constant'. When I decided to leave behind the comfort of familiarity of the local anaesthesia board exams, I created space for my personal development. Everything that was once normal suddenly changed. I had to reinvent myself which came with a lot of insecurity dashed with a feeling of failure but above all I had to promote perseverance. The exams comprised plenty of additional new inputs ranging from anatomy to core physics and technicalities. Methods of answering and marking may differ but it is the same ball game. These exams do not require you to uproot and move to a new centre or join at a specific date. There is no set mould to fit yourself into. In fact, nothing pertaining to it is specific. It boils down to you picking up every ounce of your effort and studying until the date of payment is due and then you start your lonely journey down the exam hall. There is no post-mortem and neither are there people you can share your complexities with. You learn to rely on yourself and the very few whom you will hold close to heart. To this, all I can say is, great teachers do not just come armed with knowledge from great books. They are mere mortals who mastered the supreme art of teaching with passion and inclusion. So much changed for me when I decided to hold on, and it will continue, even faster than before.

Make hay while the sun shines. If you find yourself thinking and waiting to follow the norm you are already too late to start moving. My advice to those seeking to dabble whether with the parallel pathway or the local board exams is to create space for this new change in your life. The rules are clearly defined now after many discussions and endless meetings fuelled by constant rumours while we sat around at one point in a daze. Finish the exams within the stipulated time frame (always easier said than done), complete three years of training in a certified centre and then find yourself on the route to gazettement. In these centres you will find yourself down the gruelling six-monthly assessments that you must balance between life, family, career and a log book. All of this do not translate to be an easy feat and those who are in the process of it have gone through great lengths. Those hellbent on going abroad will find that the exams are readily approved by the General Medical Council, United Kingdom. Now this is where it can get tricky because most people are not good at change. They want to keep holding on to the familiar and comfortable, while others are already exploring the unfamiliar and growing professionally and personally.

I have so many people to give credit to for getting through the exams; people who motivated me and encouraged me; those who believed in me. Surprisingly, those who did not (believe in me) fuelled me even more. Their insight and perspective pushed me forward. Life does not have its own navigational system that directs someone to their desired destination. One must make decisions and rely upon his/her choices made to get him/her to the preferred destination. It is amazing how we all have our own resiliency and ability to recover from, and all I can say is when you finally grab the bull by its horn, anything is possible.

"I took the one less travelled by, and that has made all the difference".

Thank you.

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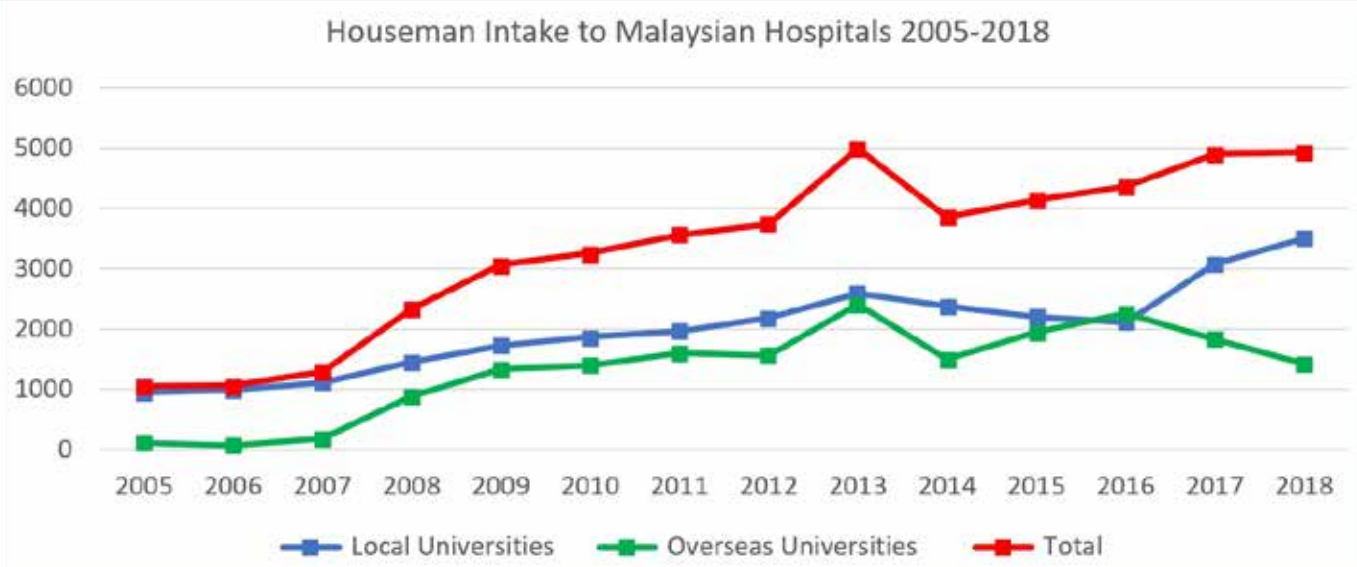
The Junior Doctor Conundrum....

by Dr Kevin Ng Wei Shan
University Malaya Medical Centre

In mid-2021, amidst the height of the worse pandemic the country has seen, a group of young doctors got together and formed a group known as Hartal Doktor Kontrak, threatening to strike and walk out of their respective positions in protest of their uncertain futures. The day selected was 26th July 2021, and despite the dramatic name of Hartal, a peaceful protest was instead carried out on that day where about 500 out of 20000+ junior doctors walked out for about 60 mins. The demonstration showed the frustration of the junior doctors, and it indicated a will to unite for a common goal, which in my opinion is promising.

So why have we gotten to this stage? And where do we go from here? First, we have to take a little history lesson in the development of medical graduates in Malaysia.



Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Local Uni	945	993	1104	1449	1726	1864	1964	2180	2588	2370	2195	2106	3077	3498
Overseas Uni	104	66	186	877	1332	1388	1600	1563	2403	1490	1945	2254	1826	1426
Total	1049	1059	1290	2326	3058	3252	3564	3743	4991	3860	4140	4360	4903	4924

Figure 1: Chart and table showing the total number of Houseman Intake by the Ministry of Health and place of graduation from 2005 to 2018 (Medical Planning Division, KKM)

In the 1990s, as Malaysia emerged as one of the fastest growing economies in the world, there was an urgent need to increase the supply of medical staff for the growing population. As such there was a mushrooming of medical schools and colleges offering allied health courses, pharmacy, dentistry and medicine. We then saw a mass production of graduates, leading to the perceived oversupply that we see today. From the chart above we can see an increase in medical graduates from 2008 onwards, peaking in 2013, and plateauing to just under 5000 medical graduates a year. In 2010, to control the rising number of graduates, the Government instituted a Moratorium on the expansion of new medical schools, and this was renewed in 2015 and again in 2020.

One would think that a large number of graduates would be a boon for the healthcare system, which has been crying out for help since Merdeka. Everywhere we look, we see a shortage of doctors within the departments, and we would always face the eternal crisis of not enough coverage for Medical Officers during peak periods like holidays and exams. So, what has happened?

The apparent shortage of doctors in service, and the perceived glut of medical graduates boils down to one simple matter, the lack of positions to hire these graduates and to keep them in service. As such, despite having an abundance of graduates, the number of employment opportunities (i.e. Perjawatan) has been

static since the early 2000s. This is in line with the Government's plans to keep the size of the civil service in check, started by our 4th Prime Minister and his government. This was again reiterated by the 7th Prime Minister, in his opening week of office. In 2020, the JPA has launched a quest to resize civil services, and the process is ongoing. Those amongst us who have asked for additional staffing would understand the ordeal and the tribulations necessary to even obtain one extra Medical Officer for the department.

Rightsizing of the civil services. While this is something I agree with in principle, I believe that education and medical services should be excluded from this. And here is why. The population of Malaysia grows at a rate of about 1 to 1.2 million per year. We are an aging population and a society that is hyperfocused on food. The incidence of non-communicable diseases increases yearly, increasing the burden and demands on the already stretched healthcare services. How is it possible to reduce or maintain the same number of staff to provide the services needed? How are the medical services to expand without the necessary support of human resources? We can only look around and we can see the hidden secret of unused infrastructure, that lies empty due to the lack of sufficient staff to man and operate them. What we need is better planning with regards to human resource management to match population needs, not just match administrative needs. But I digress, let us come back to the issue at hand, the plight of the junior doctors.

To deal with the lack of permanent positions, and the slow process to increase these very positions, the Ministry and Administration decided to reintroduce the contract system for housemen. To the seniors here, those who were HOs before 1980 would remember that housemen were contract officers then, before the introduction of permanent positions to encourage doctors to join the government service in the early 1980s. So, in December 2016, the contract system was reintroduced. This entailed a 2 + 1-year contract for Housemanship training followed by 2 years' contract for the completion of compulsory service. In theory, those who excelled in these 4 years would be offered permanent positions as it opened up and it was hoped that more than 60% of the intakes would be absorbed.

As part of the Section Concerning House Officers, Medical Officers and Specialists (SCHOMOS) Executive Committee, we had raised our concerns that the contract issue is a stop-gap measure. We felt that although it would reduce the waiting time a little, it would not offer a long-term career pathway to the doctors. As such we pushed for a more comprehensive review of the career pathway for the junior doctors, looking at medium and long-term solutions. We presented to all levels asking first for a yearly increase in positions to match the population growth and needs (we estimated 2000 positions per year) and an extended contract. We also suggested the reduction or merging of medical schools, but this was not a popular solution.

The process has been long and arduous. With every change in government, we had to lobby the new administration again to review this. The solution is not simple, as funds are limited and the issue was not a priority at that point in time as there was a perception that there were 4 years to solve the issue at hand. In May 2021, in a meeting with the JPA top administration, the issue was discussed and KKM indicated that a decision was soon to be made. Thus, in July 2021, the decision was released by the 8th Prime Minister, Tan Sri Muhyuddin Yassin, that there would be an extended contract for the junior doctors, as well as opportunities to further their studies with government scholarships to those who qualify. This is not the ideal solution, but it is the only one possible at this point to quickly resolve the conundrum faced by the junior doctors who were at the end of their contracts.

The extended contracts will allow for some of the remaining contract doctors to specialize and continue their medical education. They have been given an extra 2 years of service, and 4 years to specialize after that, which is barely enough to qualify for and complete many of the Master's programmes in our country. There are plans to offer permanent positions with only an EPF option, but again this would involve a major policy issue, and as such will not happen overnight. The offer on the table is still a contract offer, and one that many junior doctors feel is not sufficient reason to stay, a sentiment I can understand and commiserate with. The delay in this announcement has also caused Malaysia to lose a large number of young talents to other countries around the globe, and perhaps

one day we will once again "tumpang gembira" as we always do with their success in the international arena.

So where do we go from here? And what are the other issues we face?

I would highlight these four as the most pertinent of issues we face

1) Continuous overproduction of medical graduates
2) Aging healthcare infrastructure
3) Disproportionate distribution of human resources, urban favoured over rural
4) A non-existent healthcare financing plan

To discuss this would take more than the scope of this write-up, but in short, here are some suggestions we have put forth to the government

1) Merging of medical schools to reduce the number of graduates and improve the teacher-to-student ratios. This suggestion was extremely unpopular when we presented it to the powers-that-be

2) Medical licensing exams, to ensure the quality of doctors serving the Rakyat

3) Increasing the healthcare budget to match our needs, to ensure that the infrastructure of healthcare is upgraded and maintained

4) Improving the benefits of those who remain in government service, rewarding the doctors who stay to serve, rather than across the board

5) Increasing the perks for those serving in the rural and less popular hospitals. Tying the permanent positions to the district hospitals

6) Setting up a more sustainable healthcare financing plan. Our system cannot go on where patients are paying RM1 for treatment. It is imperative that we have a system that would allow for the protection of the B40, yet ensure that those who can afford it will contribute their fair share.

The Malaysian healthcare system is amongst the best in the world. But it is the best because of its affordability, as well as accessibility. However, there are issues that are slowly coming to boil, and we need the political will, as well as the combined cooperation of all levels of governance, to ensure that we will continue to be amongst the best. Should the focus on healthcare waver, more so as the pandemic winds down, we may not be able to cope when the next pandemic comes our way. So let us all take heed, and keep the issue of a fairer and clearer pathway for the junior doctors in the forefront of everyone's minds, as these very doctors will be our specialists in the future.

I was once told by a senior administrator, that the issue of healthcare human resources in Malaysia is not new, and has been an issue documented in books from the 1930s. My answer is this, so let the issue come to rest now. We have the trained members to meet the demands of the country, but not the ability to put them in jobs where they are needed most. We can solve the issue, should we want to. Healthcare must be a priority, as seen in the battle against COVID-19. So let us unite to call upon the Government and Administration to ensure that the contract issues of our junior healthcare workers are attended to, and resolved quickly to ensure a fair and sustainable career pathway for them all.

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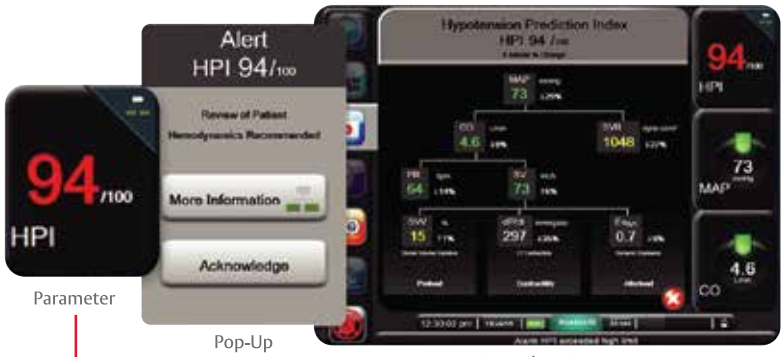
*A hypotensive event is defined as MAP <65 mmHg for a duration of at least one minute.



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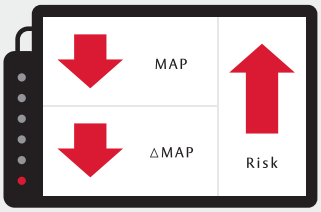
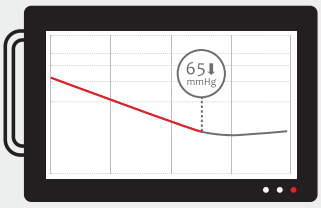
Hypotension study findings point to increased risk

Highlights from 2017 Salmasi, et al.[5]



Mean arterial pressure (MAP) below absolute thresholds of 65 mmHg or relative thresholds of 20% or more below baseline were progressively related to both myocardial and acute kidney injury (AKI). At any given threshold, prolonged exposure was associated with increased odds.



Absolute and relative MAP thresholds had comparable ability to discriminate patients with myocardial or kidney injury from those without. The results suggest that maintaining intraoperative MAP greater than 65 mmHg may reduce the risk of AKI and myocardial injury.

We would love to hear from you - participate in our Intraoperative Hypotension Survey!

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Edwards

Fascial Plane Blocks for Cardiothoracic Surgery

by Dr Mohd Fahmi Zakariah & Dr Rusnaini Mustapha Kamar
Universiti Teknologi MARA

Introduction

Effective perioperative pain management plays a crucial role affecting the outcomes of patients undergoing cardiothoracic surgery. Perioperative cardiothoracic surgery pain may arise from multifactorial causes, including pain from skin incision, sternotomy, sternal or rib retraction, internal mammary artery harvesting, and chest drains.[1] Inadequate pain management in cardiac surgery results in increased morbidities, prolonged recovery and hospital stay, and increased risk of chronic postoperative pain.[2,3] Chronic pain post sternotomy and thoracotomy has been observed in about 20% and 25 - 60% of patients, respectively.[2,3]

Until recently, parenteral opioids have been the main analgesics used for cardiac surgery. However, opioids have well known adverse effects such as respiratory depression, ileus, nausea, vomiting, pruritus, and opioid induced hyperalgesia.[4] Enhanced recovery after surgery (ERAS) program for cardiac surgery advocates opioid-sparing pain management strategy which incorporates multimodal analgesia with regional blocks.[5] Regional anaesthesia techniques have been shown to provide acute postoperative pain relief as well as protecting against opioid induced hyperalgesia and chronic post-surgical pain.[6]

Thoracic epidural analgesia (TEA) and paravertebral block (PVB) are traditionally the "gold standard" regional anaesthesia techniques for cardiac surgery. However, they are technically demanding, and are associated with rare but serious complications such as epidural haematoma secondary to post-heparinization, haemodynamic instability, and pneumothorax.[7,8]

Fascial plane blocks are defined as regional anaesthesia techniques in which the space ("plane") between two discrete fascial layers is the target of needle insertion and injection. The deposition of local anaesthetics (LA) within the fascial plane is expected to block the sensory nerves responsible for nociception along the surgical incision. In recent times, fascial plane blocks have been gaining popularity in cardiac and thoracic surgery due to their simplicity and perceived low risk of complication. There are a number of fascial plane blocks that have been described for the chest wall.[9] However, this article will focus on two techniques that are most used for cardiothoracic surgery - serratus anterior plane (SAP) and erector spinae plane (ESP) block.

Serratus Anterior Plane (SAP) Block

Serratus anterior plane (SAP) block was introduced by Blanco et al. in 2013 as a less invasive regional anaesthesia technique for thoracic wall.[10] There are two variants of SAP block; superficial and deep in which the LA is deposited within the plane superficial or deep to serratus anterior muscle respectively at the level of 4th - 5th rib mid-axillary line. This results in analgesia to anterolateral and posterolateral chest wall via blockade of the intercostal nerves, long thoracic nerve, and thoracodorsal nerve.

Indications

SAP block has been reportedly used in breast surgery, video assisted thoracoscopic surgery (VATS), thoracotomy, minimally invasive cardiac surgery (MICS), and in acute pain management of ribs fracture.

How to perform

SAP block is performed in supine position with the ipsilateral arm abduction. Following the usual preparation for regional anaesthesia block (intravenous access, standard monitoring, aseptic preparation), the high frequency linear ultrasound probe is placed transversely at the mid-axillary line of fifth rib (nipple level). In this position, identify a superficial and thick muscle, the latissimus dorsi, overlying the deeper serratus anterior muscle (Figure 1). The thoracodorsal artery can be identified in the plane between latissimus dorsi and serratus anterior by using colour doppler. Following the identification of the landmark, a 22G 4-inch echogenic needle is inserted in-plane from anteromedial to posterolateral direction into the fascial plane between latissimus dorsi and serratus anterior (superficial SAP) or between serratus anterior and the rib (deep SAP). Long acting LA (Levobupivacaine 0.25% or ropivacaine 0.375%) 0.4ml/kg is then injected into the fascial plane.

Continuous SAP block could also be performed using a continuous catheter. In Hospital UiTM, we collaborated with the cardiothoracic surgeons to introduce surgically inserted continuous SAP catheter insertion for open thoracotomy and MICS (Figure 2). The SAP catheter is inserted by the surgeons within the deep serratus anterior plane prior to wound closure. We also perform surgically inserted continuous fascial plane catheter techniques in other open surgeries such as open cholecystectomy (subcostal TAP catheter) and laparotomy (rectus sheath catheter).

Evidences

In a systemic review and meta-analysis of SAP block conducted by Chong et al, there were 6 RCTs involved in thoracic surgery and 13 in breast surgery.[11] The meta-analysis found that SAP block reduced early postoperative pain score compared to non-block care,

Figure 1: Patient positioning and ultrasound probe placement for SAP block

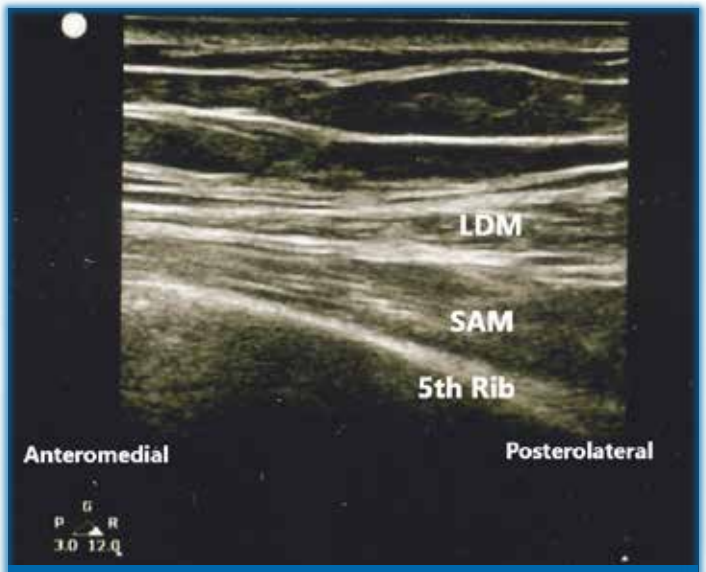

Figure 2: Ultrasound view of the SAP block. LDM = latissimus dorsi muscle, SAM = serratus anterior muscle

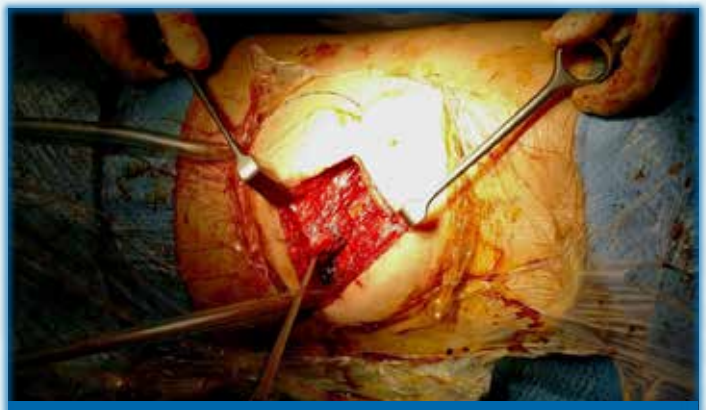

Figure 3: Surgically inserted continuous SAP block catheter

reduced 24-hour opioid consumption, prolonged time to analgesic request, and reduced PONV and pruritus.

Erector Spinae Plane (ESP) Block

Erector spinae plane (ESP) block was introduced in 2016 by Forero et al. as an analgesia technique for thoracic neuropathic pain.[12] It is an interfascial plane block wherein LA is injected to a plane between transverse processes of thoracic spine and erector spinae muscles. Since its introduction, ESP block has been rapidly gaining popularity and used as perioperative analgesia in a multitude of cases including thoracic, abdominal, and spine surgery. Recently, bilateral ESP block has been described as an effective alternative to TEA and PVB as a regional anaesthesia technique for cardiac surgery.[9]

The exact mechanism of action of ESP block remains a much-debated topic. Collective evidence suggests that ESP block may work through several mechanisms such as LA spread towards dorsal ramus, ventral ramus, paravertebral space, and epidural space.[13]

Indications

ESP block has been described in breast surgery, thoracotomy, VATS, MICS, and in cardiac surgery involving sternotomy (bilateral ESP).

How to perform

ESP block can be performed in sitting, lateral, or prone position. Following the usual preparation for regional anaesthesia block (intravenous access, standard monitoring, aseptic preparation), the high frequency linear ultrasound probe is placed in the paramedian sagittal orientation 2-3cm lateral to midline. Transverse process of the thoracic spine is identified as squared-off acoustic shadows (Figure 4). If the transducer is too lateral, the ribs will be visualized instead; these are recognizable as rounded acoustic shadows with an intervening hyperechoic pleural line. Upon visualisation of the transverse process, the trapezius muscle, rhomboid major muscle (if performing at T5 level or higher), and erector spinae muscle should be identified above the transverse process. ESP block is usually performed at T5 level for thoracic surgery or T4 level for sternotomy.

The 21G 4-inch echogenic block needle is inserted in cranio-caudad or caudo-cranial orientation until the needle tip touches the transverse process. The correct plane is confirmed when there is linear fluid spread lifting the erector spinae muscle after a small hydrodissection of 1-2 ml. After confirmation a bolus of 20-30 ml of LA is injected. Continuous ESP block could be performed using a continuous RA kit.

Figure 4: Patient positioning when performing ESP block

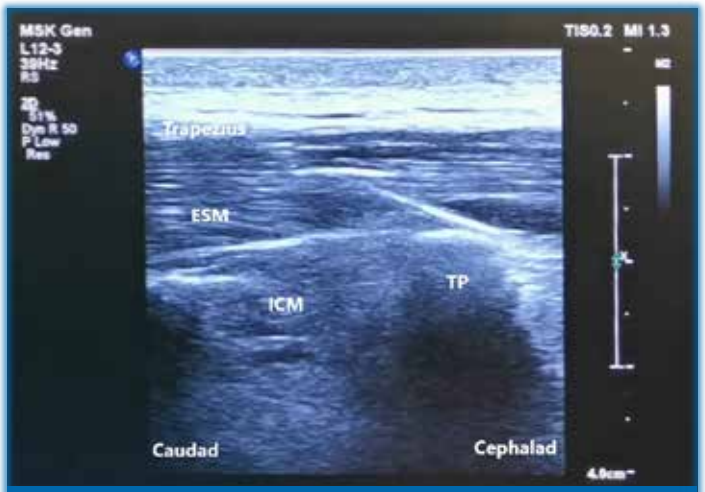

Figure 5: The ultrasound image of Erector spinae plane block

Evidences

A recent meta-analysis of ESP block by Huang et al.[14] analysed 7 RCTs for thoracic surgery and 7 RCTs for breast surgery. They reported that ESP block reduced postoperative pain score, 24-hour opioid consumption, and postoperative nausea and vomiting as compared to non-block care. The meta-analysis also showed comparable outcome between ESP block and thoracic paravertebral block.

Evidence of ESP block in cardiac surgery is still limited. Currently there are 2 RCTs reported in the literature. RCT conducted by Nagaraja et al. compared bilateral continuous ESP block to thoracic epidural in 50 patients undergoing CABG. The study concluded that ESP block provides comparable analgesia, shorter duration of mechanical ventilation, and ICU stay compared to thoracic epidural.[15] Another RCT conducted by Krishna et al compared ESP block to non-block care in 106 patients undergoing cardiac surgery with cardiopulmonary bypass. They concluded that single shot ESP block provides lower postoperative pain score, reduced opioid requirement and shorter extubation time and ICU stay as compared to non-block care.[16]

Summary

Fascial plane blocks are rapidly gaining popularity in the ERAS era for cardiothoracic surgery and should be in the anaesthesiologists' armamentarium. In our opinion, ESP block is currently a high value block in cardiothoracic surgery, followed by SAP block. We have also introduced surgically inserted continuous SAP block catheter technique along with other surgically inserted continuous fascial plane catheter that are easy to perform. However further research is needed to investigate the safety and efficacy of such applications.

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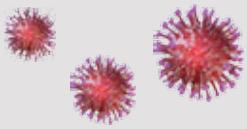
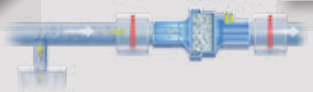
PALL CORPORATION

CORONAVIRUS DISEASE (COVID-19) OUTBREAK PROTECTION

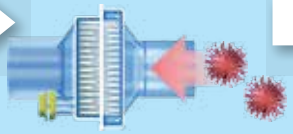
WITH PALL BREATHING SYSTEM FILTERS IN MECHANICAL VENTILATION



A novel Coronavirus outbreak is developing fast and has affected many people and claimed thousands of lives



Pall Breathing System Filters have been shown in laboratory testing to retain airborne viruses at >99.999% and liquid borne viruses at 100% efficiency [1,2,3]



Based on the size and shape of the Coronavirus and on existing data for MS2, HCV and H1N1 we expect Pall Breathing System Filters to provide high levels of retention for the SARS-CoV-2 from ventilated patient's exhaled breath

Clinical studies confirmed that **Pall Breathing System Filters** meet the highest performance standards in the prevention of cross contamination [4,5]

Airborne Transmission of Disease

There is a risk of transmission in hospitals during aerosol-generating procedures related to ventilation:

- Bronchoscopy
- Endotracheal intubation
- Airway suctioning
- Positive pressure ventilation via facemask (e.g. BiPAP, CPAP)
- High frequency oscillatory ventilation
- Sputum induction
- Aerosolized or nebulized medication application[6]

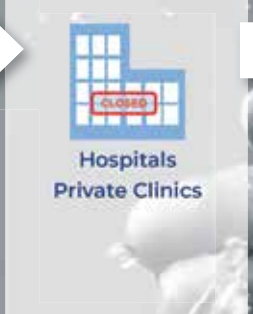
Learn more:
pall.com/en/medical/mechanical-ventilation/coronavirus

1 Heuer et al (2013); GMS HygInfect Control 8(1):Doc09
2 Lloyd G.et al. AnaesthesiaIntensive Care (1997) 25: 235
3 Lloyd G & Howells J, CAMR (1997)
4 Hübner et al.(2011); GMS Krankenhaushygiene Interdisziplinär Vol. 6(1 ISSN 18635245
5 Dubler et al.(2016); Acta AnaesthesiologicaScandinavicaOct;60(9):1251-60
6 www.cdc.gov/sars/guidance/i-infection/healthcare.html

PALL CORPORATION

MANAGEMENT OF WATER DISTRIBUTION SYSTEMS DURING THE CORONAVIRUS DISEASE *(COVID-19)*

Countries across the world are starting to publish exit plans or to ease restrictions following the COVID-19 pandemic.



In the attempt to contain the COVID-19 pandemic many buildings worldwide have been temporarily closed or specific wards repurposed.

If water systems are not correctly managed, high levels of water stagnation and waterborne pathogens (including *Legionella*) may be expected in these closed buildings.

- WHO guidelines[1-2]
- ESGLI guidelines[3-5]
- CDC recommendations[6]

Guidelines have been published to help manage the water distribution system and reduce the risk of growth of waterborne pathogens (including *Legionella*) during the stagnation period.

Among several recommended measures, the installation of Point-of-Use Water Filters provides an immediate and efficient physical barrier against waterborne bacteria, such as *Legionella*.

Learn more:
pall.com/en/medical/water-filtration/coronavirus

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References:
1 WHO Technical Brief, Water, sanitation, hygiene and waste management for COVID-19
2 WHO Interim guidance, Operational considerations for COVID-19 management in the accommodation sector
3 ESGLI Guidance for managing *Legionella* in building water systems during the COVID-19 pandemic
4 ESGLI Guidance for managing *Legionella* in hospital water systems during the COVID-19 pandemic
5 ESGLI Guidance for managing *Legionella* in nursing & care home water systems during the COVID-19 pandemic
6 CDC, Guidance for Building Water Systems (https://www.cdc.gov/coronavirus/2019-ncov/php/building-water-system.html, Accessed on 7 May 2020)

ANAESTHESIOLOGISTS *Create . . .*

Page dedicated to showcase the creative works of Anaesthesiologists in Malaysia. This page is specially made for the budding artists, the avid photographers and the creative talents amongst our fellow anaesthesiologists. This page provides a platform to share and showcase their masterpieces…

Dr Loy Yuong Siang . Columbia-Asia Puchong

GLOVE *Art*

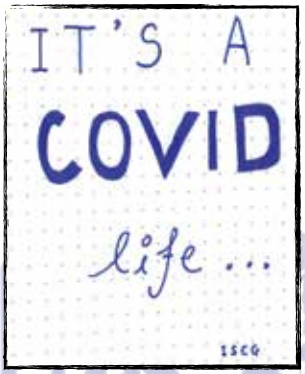
Dr Haslan Ghazali . KPJ Pahang Specialist Hospital

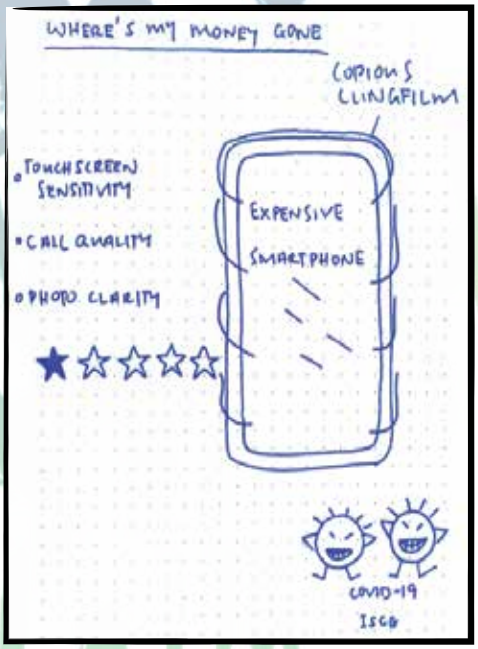
Dr Mahmud Zuhdi Abdullah . Kuantan Medical Centre

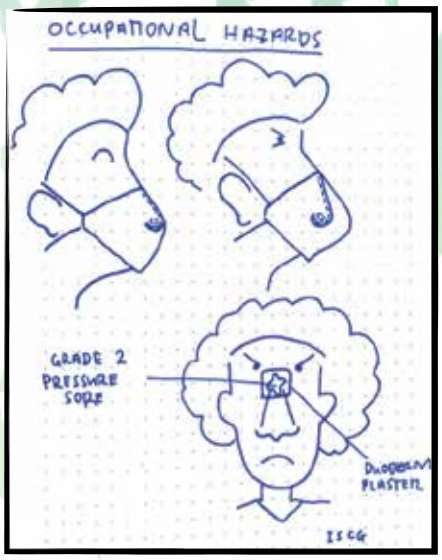
Dr Mahmud Zuhdi Abdullah
Kuantan Medical Centre

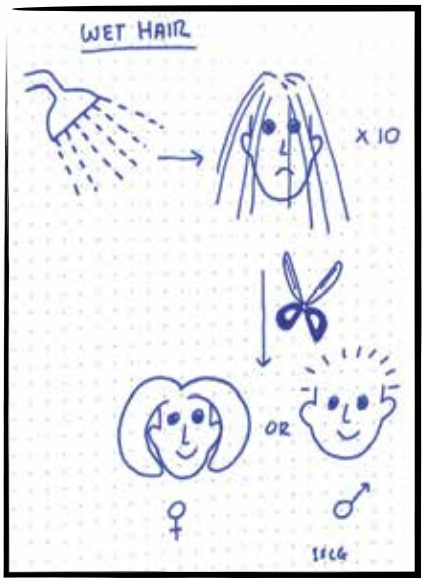
Just For Laugns..

by Dr Ivy Sim Chui Geok
Universiti Teknologi MARA









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The main objectives of the SIG will be to increase awareness on the importance of good well-being in healthcare providers, that will have a direct effect on the quality of patient care. It is also to promote wellness amongst anaesthesiologists, focusing on the five key elements of well-being which include Physical, Mental/Emotional, Spiritual, Intellectual and Social and, finally, to provide support to ensure continuous effort in improving the general well-being of anaesthesiologists in Malaysia, which begins at the work place, both in the operating theatres and the intensive care units.

The activities in the pipeline include organising a national resilience workshop and the "Joy at Work" campaign and competition to promote happiness at workplace and reward the happiest workplace. Joy at work will result in the formation of a "Good Team". It is not enough to just work as a team but also has to be a good team, to improve patient outcomes, increased staff satisfaction and reduced incidence of burnout.

Apart from the above activities, the CoA will continue to oversee the training of the parallel programme, the fellowship of College of Anaesthesiologists of Ireland (FCAI). The CoA is planning to employ a staff to solely focus on coordinating this programme, in order to provide a more efficient and professional service to the candidates who are registered for the programme with our CoA. In addition, the CoA has recently accredited University Science Malaysia (USM) as a training hospital for FCAI candidates, in our effort in making sure that candidates are trained in hospitals that have been accredited by the MQA. We also participated in the writing up of the National Curriculum for Anaesthesiology to ensure the harmonization between the National and Parallel Programme curriculum.

Our CoA will also be reviewing our recommendations for patient safety and minimal standards of monitoring during anaesthesia and recovery that was last updated in 2013.

The monthly webinars in collaboration with the MSA will resume with a webinar on Hemodynamic Monitoring on the 13th November 2021.

I would like to end this message by wishing everyone to stay happy and healthy.

Message from the President of the College of Anaesthesiologists, AMM

Professor Dr Marzida Mansor

This will be my first message as the President of the College of Anaesthesiologists. The last two years as the President of the Malaysian Society of Anaesthesiologists, in the midst of a pandemic, has taught me things that I could not even imagine. We had, for the first time, conducted our webinars, National Anaesthesia Day celebration and Annual Scientific Congress virtually. The pandemic has also kept us on our toes by ensuring that we continue to provide the recommendations and resources to fight it. We are thankful that we are now slowly moving into the recovery phase and the country has started opening up its economy. Huge thanks to all the frontline workers for their selfless sacrifices. At the same time, we shall continue to be prepared for any eventuality.

On 4th to 6th August 2021, we have successfully organised the MyAnaesthesia 2021 also known as MSA/CoA Annual Scientific Congress. The Congress was officiated by YBhg Tan Sri Dato' Seri Dr Noor Hisham Abdullah, Director-General of Health. The entirely virtual congress was very well received and attracted about 1200 participants. The theme was "Dawn of a New Era" to depict the new way of living that we have to adapt to due to the pandemic. In line with the theme, we had expounded on numerous topics related to the pandemic. I would like to thank the organising committee and the scientific committee that were led by Dato Dr Jahizah Hassan, Associate Professor Dr Azarinah Izaham and Dr Hasmizy Muhammad for their sterling work.

The virtual 17th World Congress of Anaesthesiologists was held on 1st to 5th September 2021. We participated in the WFSA Global Village at the Congress and had established networking with the UK Royal College of Anaesthetists (RCoA). We hope to collaborate with RCoA in expanding and enhancing Perioperative Medicine in Malaysia.

On 16th October 2021, we celebrated World Anaesthesia Day, also known in some countries as National Anaesthesia Day (NAD) or Ether Day. The NAD celebration this year was organised by both the MSA and the CoA in collaboration with the private anaesthesiologists. This was the first time that the private anaesthesiologists were fully involved in the Anaesthesia Day celebration at a national level and we could not thank them enough for their very generous contributions this year. This reminded me of the Public-Private collective response in combating COVID-19 in Malaysia: Stronger together indeed.

I would like to especially thank the NAD Organising Committee, Dr Gunalan Palari, and his team, who had been highly creative and had worked very hard, to ensure the success of this event. My special thanks also to the Virtual Run, Virtual Quiz and Anaesthesia Got Talent coordinating teams, headed by Dr Kevin Ng, Professor Dr Rafidah Atan and Dr Mohd Azizan Ghazali. Huge thanks also to the secretariat, frontliners and public out there who had participated and supported all these activities. Judging from the overwhelming responses, we had lots of fun while celebrating the skills and attributes of those whom we work alongside with and rely on.

Anaesthesiologists all over the world are well known for our teamwork skills which include leadership, communication, mutual monitoring, giving and receiving feedback, etc. Incidentally, the theme of our NAD this year is Teamwork: Stronger Together. The fraternity of anaesthesia in this country is represented by two bodies, namely the Malaysian Society of Anaesthesiologists and the College of Anaesthesiologists, Academy of Medicine of Malaysia. The MSA was established on 29th January 1964 and the CoA, AMM on 16th December 1995, 31 years apart. Ever since the CoA's inception, both bodies have been working hand-in-hand, forging ahead together and this year, we are embarking on another milestone with the launching of our very own official journal "Malaysian Journal of Anaesthesiology". My best wishes to the MSA and the CoA for this new endeavour. An exemplary show of teamwork: Team Anaesthesia.

As our members are our strength, I would also like to take this opportunity to encourage anaesthesiologists to join the CoA. We have about 1100 anaesthesiologists registered in the National Specialist Register but only 207 are members of the CoA. Out of this, 48 are Fellows of the CoA, AMM. So, do not waste any more time, visit the AMM website and fill up the membership form today if you are committed to upholding the highest ethical standards and professional competence of our fraternity and wanting to improve the safety and quality of our work.

A follow-up to the last year's NAD celebration that focussed on the relationship between the well-being of the anaesthesiologists and patient safety, this year, the CoA will also be resurrecting its Well-Being SIG that has laid dormant for a couple of years. We could foresee the parallel pandemic that will be affecting the mental well-being of health workers including anaesthesiologists.

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