

BERITA anestesiologi



College of
Anaesthesiologists, AMM of Anaesthesiologists



Malaysian Society
of Anaesthesiologists



#MEDSAFE
are we there yet...?

Message from the PRESIDENT OF THE MSA

Professor Dr Ina Ismiarti Shariffuddin



Assalamualaikum w.b.t and salam sejahtera,

Dear Esteemed Members,

We are now in the last quarter of 2022. Many of us will agree that 2022 has been a better year. Alhamdulillah, we can now get back to our near-normal activities with specific precautionary steps to adhere to.

I am very delighted to inform you that the MSA has been involved in many activities this year and is planning for more such events next year. Since the last Berita newsletter in July 2022, the events that have been successfully organised by the MSA are as stated below:

1. The Annual Scientific Congress of the Malaysian Society of Anaesthesiologists and the College of Anaesthesiologists, AMM, 2022, with the theme '*MyAnaesthesia 2022: FOCUS - Forging Onwards to a Collaborative Unified Success*' was held on 4th to 7th August 2022 at the Shangri-La Hotel, Kuala Lumpur. This was a hybrid meeting attended by almost 1200 participants combined. The conference also attracted 47 booths and four hospitality suites from all our biomedical industry partners who have given us tremendous support all these years. We were privileged to have

Dato' Dr Asmayani Khalib, Deputy Director-General of Health (Medical), Malaysia to officiate the opening of the congress. The feedback we received from the participants and company personnel was positive and encouraging.

2. Every year, the MSA and the CoA celebrate World Anaesthesia Day with our members to commemorate the birth of Anaesthesia. The MSA and the CoA celebrated the National Anaesthesia Day this year at Hospital Al-Sultan Abdullah, Universiti Teknologi MARA (UiTM). The theme was "Medication Safety". It was a joyous celebration that saw the camaraderie of the anaesthesia family. I am very proud that anaesthesiologists have always been the leaders in safety. Thus, let us embrace the "medication safety" theme and make it an important part of our daily practice. I congratulate the Anaesthesia Department, UiTM, led by Dr Adlin Dasima Abdul Kadir. and the Organising Chair, Dr Fauziah Ahmad, for being a wonderful host.
3. In this digital era, the website and social media are the way for the MSA to engage with our members and increase our visibility. Thus, the MSA website had just undergone

a new facelift. We hope it is more user-friendly and we also are in the midst of updating the members' corner to provide our members with more information and privileges. I thank Dr Kevin Ng and his team for leading this project. Last but not least, I would like to remind our members that we still have access to a few online journals via our Ovid subscription.

4. The MSA encourages our budding anaesthesiologists to participate in research and contribute to the new body of knowledge in Anaesthesia, Intensive Care Medicine, and Pain Medicine. We have the K Inbasegaran Research Fund to support this and, starting this year, we have increased the grant amount from RM10,000 to RM20,000. Please visit our website for more details on the terms and regulations for the application.
5. The MSA, in collaboration with the CoA, has successfully published the inaugural Malaysian Journal of Anaesthesiology (MYJA) launched at the MSA & CoA ASC 2022. The MSA encourages our fraternity to take this opportunity to share your anaesthesia practice and patient management in a scholarly manner with us in this journal. We also encourage all postgraduate students who have written up their thesis to submit their manuscripts

to MYJA. This is an open-access digital journal published twice a year and this journal can be accessed via www.myja.pub.

6. The MSA, with our representatives, Dr Raveenthiran Rasiah and Dr Gunalan Palari, is working very closely with the Ministry of Health on the Anaesthetic Fee Schedule. The second round of discussions with regard to the new schedule held recently, mainly focused on additional procedures that were not there in the previous 2013 13th Schedule. Now the next step is being taken by the MOH to vet all these. This new schedule is expected to be approved sometime in the second half of 2023. We are also discussing amendments to TIVA for monitored anaesthesia care fees for endoscopy procedures and MRI fees. Currently, we are still waiting for the official letter from the MOH.
7. The MSA is very committed to ensuring patient safety. In line with this, we have collaborated with the CoA in producing guidelines. The Guidelines on Elective Surgery and Anaesthesia for Patients After COVID-19 Infection were updated in September 2022.

The MSA and the COA jointly produced the following which were launched at the ASC 2022:

- a. *Recommendations for Patient Safety and Minimal Monitoring Standard during Anaesthesia and Recovery (5th Edition) (2022)*
- b. *Recommendations for Ultrasound Guided Vascular Access (2022)*
8. The MSA collaborated with the CoA to also support the Basic Obstetric Anaesthesia workshop held on 1st October 2022 in Hospital Universiti Sultan Zainal Abidin (UniSZA) in Kuala Terengganu.
9. The MSA has also joined the Malaysian Health Coalition (MHC) to make joint statements aiming for better health care in Malaysia. The latest statements put forward were:
 - a. For Budget 2023, Time to Invest More in Public Health.
 - B. Long Term Implementation of the Health White Paper: For an Equitable and Sustainable Malaysian Healthcare System
 - c. Raise Dementia as a Public Health Priority.
 - d. Full Steam Ahead for The Generational End Game
10. The MSA will be sending representatives to attend and

speak at the Asian Australasian Congress of Anaesthesiologists (in conjunction with KoreAnesthesia 2022) in Seoul, Korea under the MOU of the MSA with the Korean Society of Anesthesiologists. In addition, I will be representing the MSA at the AARS General Assembly to bid to hold the AACA 2030 in Kuala Lumpur Malaysia. I would like to congratulate our Malaysian delegates who received the travel grant for AACA 2022. I wish you all the best of luck with your presentation.

Next year, 2023, will be a special year for the MSA as we will celebrate our Diamond Jubilee Anniversary. We would like to invite all the anaesthesiologists from all walks of life in Malaysia to join us as members, better still, as 'life members'. 'Bersatu kita teguh, bercerai kita roboh'; hence I genuinely believe only with a significant number of members can we achieve more to increase the visibility and wellness of our fraternity in Malaysia and worldwide. We have planned activities and promotions for our 60th anniversary to attract more members. Please watch out for our announcement from time to time.

Till we meet again in the next edition of Berita. Happy voting in our upcoming PRU. Please vote wisely and stay safe.

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The Editorial Board reserves the right to amend, edit or delete any or some parts of the articles contributed by the authors and will not be held responsible for any factual inaccuracies, intents or statements appearing in the articles. All communication with regards to the above will need to be directed to the authors of the articles.

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Message from the EDITOR-IN-CHIEF

Dr Anand Kamalanathan

Welcome to the November edition of the e-Berita Anesthesiologi. With profound pleasure and humility, we invite our readership to witness the birth of a minimalistic yet bold newsletter.

Our vision is to create a high-quality publication that will be relevant, challenging, thought-provoking, and inclusive of diverse voices and perspectives, including from anaesthesia medical officers, postgraduate trainees, academic researchers and scholars, policy-makers, and anaesthesiologists of varying ages. In short, this is a Berita about you, by you, and for you!

As recognised experts in patient safety, anaesthetists are at the forefront of medication safety. We employ personal and team-based practices and techniques that could rival the aviation industry standards to ensure the right patient receives the right medication, at the right concentration, at the right time and in the right place. Within this issue, we wish to highlight this message and the nationwide celebrations of the recently concluded World Anaesthesia Day on 16th October 2022.

On a personal note, this marks one year since I was given a chance to lead this fantastic editorial team. It has

been an amazing experience working with such enthusiastic and creative colleagues. I want to thank each and every one of you, and may this partnership continue to provide fruitful content for our fraternity. Together, let's make the Berita better!

Finally, on behalf of the editorial team, thank you dearest readers for your continuous support and for embracing this journey toward a more sustainable and #MEDSAFE Berita. Signing off with belated Deepavali and advanced Christmas greetings to our celebrating members, and here's hoping for a better Malaysia by the next edition.

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Close Encounters of the **MEDICATION SAFETY KIND**

by Dr Shairil Rahayu Ruslan

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MEDICATION SAFETY AND MEDICATION ERROR

Anaesthesia and intensive care, as a speciality, has always been described as disciplines that approach patient care holistically. This can be seen in how we attend to our patients every day - we do not just see a patient for his heart issues, or only for the ulcer on his leg, or for the rash that came up when he was started on a new medication. Day-in and day-out, tens and hundreds of patients are pushed into the operating theatre for surgeries and, likewise, ill patients nursed in the intensive care unit are seen and managed efficiently, some brought back quite literally from the brink of death.

The elements that attribute to patient safety are many. This year, the Anaesthesia fraternity has decided that medication safety would be an important element to talk about. The misadventures in medication dispensation and usage when it comes to anaesthesia and intensive care are repeatedly stated to be under reported.¹⁻³ Initially, this discrepancy is said to be due to the fraternity's delay (worldwide) in realising its importance and then acknowledging the severity of the problem. What began at a snail's pace in the 1980s and then in the 1990s has now gained traction in all its varied terminologies. It also has become an essential continuous teaching and learning matter among the anaesthetic trainees as well as its providers. Coincidentally, Abrishami et al⁴ have reported that the reporting of medication errors has increased exponentially within the past 20 years or so, due to this.

Medication errors occur more frequently in the healthcare system than we realise, and it has been cited as the seventh-most frequent cause of death in general.⁵ Similarly in the United States of America, hospitalised patients are seen to be at high risk for human error, which is thought to be the cause of 100,000 to 400,000 fatalities annually.⁶ The financial cost of these errors in the USA is thought to approximate USD \$40 billion annually.⁷⁻⁹

Within Malaysia, these numbers are not as well documented, especially regarding anaesthesia and the perioperative setting. Chua et al¹⁰ stated that medication administration errors were the second most common type of medication error within the medical ward. However, its incidence might as well be the most common type. This is because prescribing errors (which were numerically the most common) have the safety margin of being intercepted during dispensation. With this statement in mind, we must realise that the perioperative setting (and by extension, anaesthesia) itself serves as a high-risk environment for a medication error to occur. The urgency of certain situations and patient conditions necessitate quick action when it comes to medication administration, hence leading to a more likely occurrence of errors. However, as mentioned before, the exact rate of incidence is not clearly known, especially within Malaysia, due to the limitations of pre-existing reporting mechanisms and their follow-ups.

SO MANY TERMINOLOGIES AND DEFINITIONS

Medication errors, drug mistakes, prescription lapses... these are but a fraction of the different terminologies that basically round up to the same thing. Medication safety, as a conversation piece, only came to attention because of these "unfortunate" events. According to Aronson (a renowned British consultant physician, clinical pharmacologist and researcher who is very passionate about medication safety and everything related to it), **medication error** is defined as "a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient".^{11,12} In anaesthesia, the "treatment process" would be the everyday situations of us administering anaesthesia to our patients, which becomes an almost robotic routine due to its repetitiveness. It is within this "repetition" that mistakes occur... despite us performing the procedures in almost exactly the similar pattern, day-in and day-out. Why then, do errors pertaining to medication administration still occur?

It is imperative then that we become familiar with the following terminologies as well:

"adverse drug reaction (ADR) - not from error",

"adverse drug reaction (ADR) - from errors",

"medication errors that cause events not labelled as ADRs",
and

"medication errors that do not cause adverse events".

The following is a diagram to help us digest the terminologies and their relationship to one another:

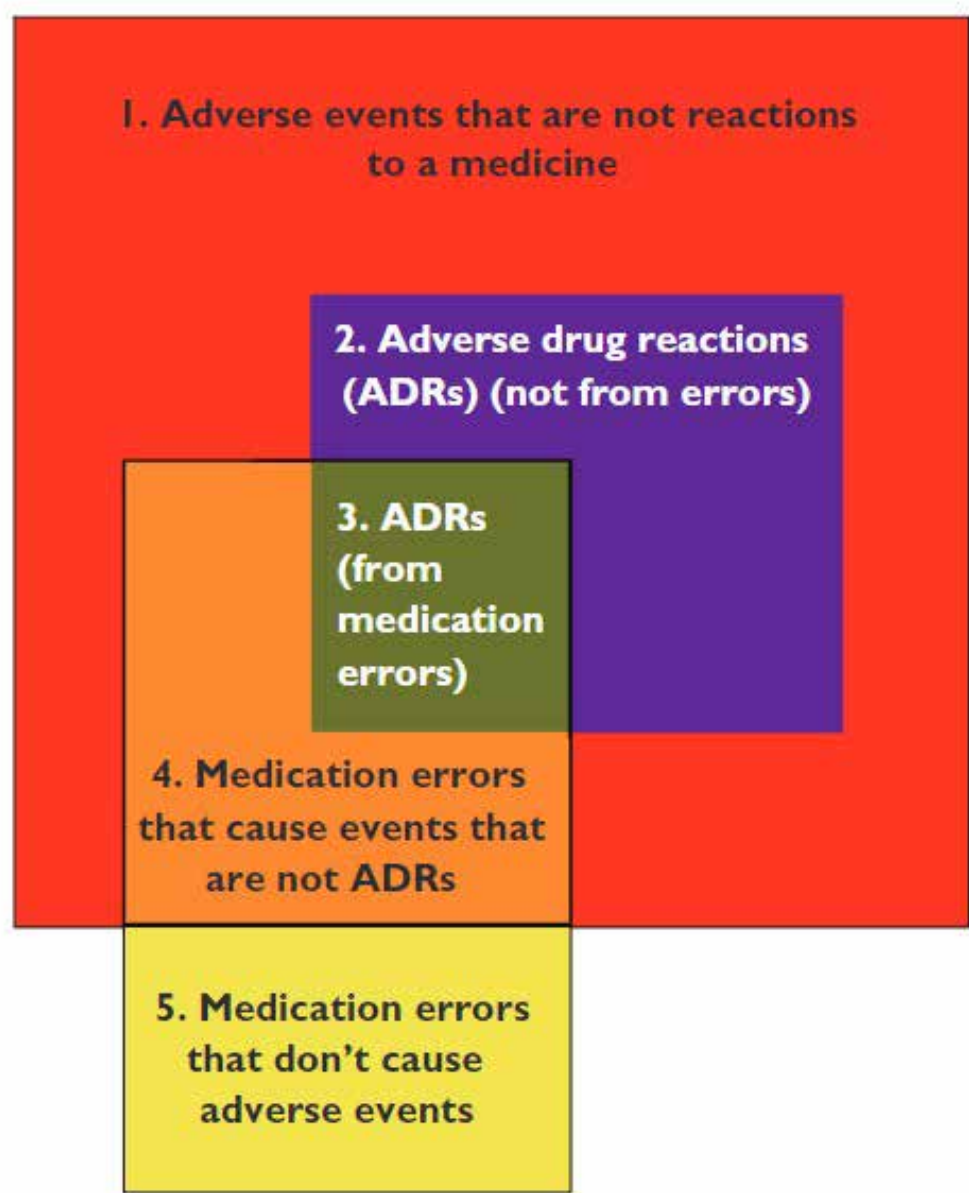


Figure 1: A Venn diagram by Ferner & Aronson,^{11,13} defining the different terminologies related to medication safety and medication errors

When we talk about errors, we can further divide those to two broad categories. We have the “mistakes” which are basically blips in knowledge

or rule breaking. On the other hand, we have the “skill-based errors”, which are also known as “slips or lapses”, related to the anaesthetic provider’s actions or

memory. The reason for the classification is because the errors that occur can be contextual, modal, or psychological.¹²

Table 1: Classification of medication error

| | |
|---------------|--|
| Contextual | Errors related to a specific time, place, medicines, or people |
| Modal | Errors related to the ways it can occur (e.g. omission, repetition or substitution) |
| Psychological | Errors that is related most to the human factor (and is the most preferred classification) |

Without going into the details, apart from fortifying the mechanical or procedural side of things (think of an

electronic dispensing system with an in-built failsafe programming), the

human side of things play a very big role in improving medication safety.

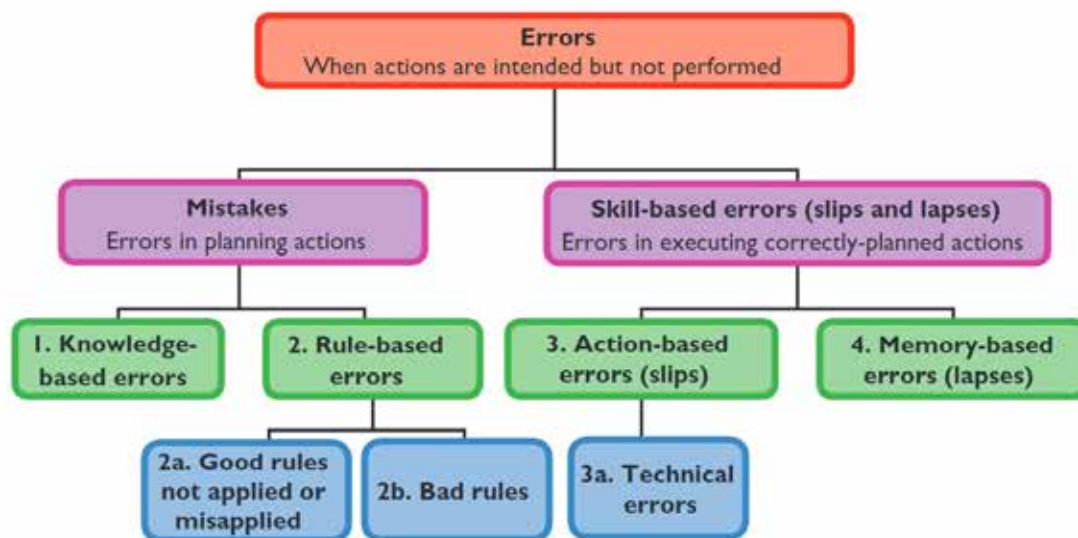


Figure 2: The psychological classification of medication errors^{11,12}

TO ERR IS HUMAN

By utilising the psychological classification above, we now know that medication safety can be made better by improving those aspects.

For example, knowledge-based errors can be dealt with by (obviously) improving knowledge e.g. regular teachings and re-teachings of trainees and staff via structured lessons or even during departmental meetings (with the aim of creating better understanding, not blame-placing). Ironically, the usage of artificial intelligence may also be helpful in training anaesthetic providers to make fewer errors (by means of a flagging or alarm system).¹⁴⁻¹⁷

Rule-based errors may be eliminated by improving the rules that are already in place. Perhaps the guideline, protocol or the checklist, that is to be used are too long or difficult to be used quickly in the setting of an emergency. This can be something that can be investigated to improve medication safety.

Action-based errors may be rectified by continuous training of providers and trainees. This can be done by means of regular workshops, hands-on practical sessions, and even supervision of the

anaesthetic trainee by a consultant during an elective anaesthesia list.

Memory-based errors are said to be the most difficult to be managed, but the common methods to improve on this go back to our traditional checklists and computerised systems.¹¹

HOW THEN, DO WE BECOME BETTER?

Various angles of weakness have been discussed (and worked on) globally to promote medication safety, ranging from clear product labelling, to contrasting colour branding, to a checklist system involving more than one person to ensure consistency, to a checkout mechanism reserved for the more “notorious” medications... even to an automated system utilising artificial intelligence to detect errors in prescription and administration.¹⁸⁻²⁰ In fact, recent technological advances have allowed the creation of a systematic and novel computerised method to pick up on these errors, with the intention of reducing the incidences (and ultimately eliminating) which is the weak link that caused the error in the first place. Of course, this goes without saying that low-and-middle-income countries (LMIC) such like Malaysia will only see the likes of this development

being used commercially, years from now, and hence we must do the best that we can with what is available right now.

Within Anaesthesia, perhaps the anaesthetic providers may adopt the tool, “5 Moments for Medication Safety”, when it comes to administering medication and anaesthesia for the patients. Originally created for the empowerment of patients regarding their own medication, this tool is appropriate and can be modified for the anaesthetic provider’s usage. The 5 steps involve:

1. the realisation of what medication is being administered and what are its side effects;
2. when and how the medication should be administered, as well as what should the anaesthetic provider do if side effects occur;
3. reflection on the need to add on medication and if any drug interaction is expected to happen;
4. reviewing the duration of medication to be administered and the need for repeated doses, as well as;
5. deciding when to stop the medication and if the termination is due to an unwanted effect, and what is the mechanism for its reporting.



Figure 3: The 5 Moments for Medication Safety published by the World Health Organization (WHO) in 2017 as part of the “Medication Without Harm” Global Patient Safety Challenge

From the above, we can already tell that the general idea behind this campaign is for us to “take more care”. According to Marshall et al,²¹ the human factors that promote medication safety are also the same factors that causes deviation from it. Even so, we must appreciate that there are cognitive processes involved in medication safety and administration. At the baseline, anaesthetic providers do not intentionally serve the wrong medication but would have checked and rechecked said agent repeatedly, as a rule. It is only when their attention and perception is affected that misidentification may occur.²² This problem may also occur at certain conditions where complacency is high, e.g. when the provider is fatigued with the repetitive work, or when the provider is lulled into a sense of safety when tasked with a “simple” list. Perhaps we can take a lesson from our nursing counterparts who often employ the two-person checklist system of dispensing medications, although the practicality of this during anaesthesia

(and especially during the more stressful time such as when a patient is coding or defibrillating) remains to be seen.

From another point of view, the factors that cause a deviation from safety can be called active or passive, in which active factors are like distraction and time-pressure, whereas passive factors are the way medications are stored and presented. As we all know, anaesthetic drugs and medications that we use in the operating theatre or even the intensive care unit are usually stored in the same place. This means that when it is administered (usually in quick succession), mistakes are bound to happen. Here is where there are two different solutions offered by various parties; 1) make starkly different packaging labels and designs so that there can be no confusion, or 2) make the packaging of all medications very similar to one another so that the anaesthetic provider will take the time to look at the vial/package closely to ensure the correct drug is given.²¹ The logic behind this second solution is that

when medications are packaged and labelled distinctly from one another, the anaesthetic provider will become complacent and rely on familiar visual cues to identify medications - again, this may lead to a situation of mistaken identity. Similarly, by compiling all medications into one container (or a “bucket” if you will), the anaesthetic provider will only be able to differentiate the different drugs by reading the details on the packaging/label.²³

Talking about medication safety can be a full day project in itself - something that big deserves a bigger spot than these six pages of writing. I would like to end this writing with the following list of rules that was compiled by Jensen et al and Wahr et al,^{6,23,24} who also created the infographic below which was shared publicly on Twitter. Most of the items on this list are simple enough to be practiced by us (except the red-barrelled syringe which we do not have), and we can strive for the best practice of medication safety by using this list as a guideline.



Figure 4: Twelve simple rules for anaesthetists to maintain a safe medication administration process

#MEDSAFETYWEEK was held from 2nd - 8th November 2022 worldwide, and various pharmaceutical and medical agencies took part in it with various programmes. By the time this newsletter is published, the event would be long past, but here are a few takeaways and resources that should be shared and may be of interest to both the healthcare provider as well as the layperson:

1. #MedSafetyWeek Campaign website, by the National Pharmaceutical Regulatory Agency (NPRA), Ministry of Health Malaysia, in collaboration with the Uppsala Monitoring Centre (UMC, the World Health Organisation Collaborating Centre for International Drug Monitoring), medicines regulatory authorities, and national pharmacovigilance centres around the world to raise awareness of medication safety and encourage reporting of suspected adverse drug reactions/adverse events following immunisation (ADR/AEFI)
<https://www.npra.gov.my/index.php/en/health-professionals/medsafetyweek.html>
2. NPRA ADR/AEFI Reporting System :
<https://www.npra.gov.my/index.php/en/health-professionals/reporting-adr.html>
3. Program Perkhidmatan Farmasi KKM on Facebook :
<https://www.facebook.com/BPFIPKKM>
4. Kenali Ubat Anda on Instagram :
https://www.instagram.com/kenali_ubat_anda/?hl=en

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Becoming the **IRON MAN**: Mending a Broken Heart with the Heartmate III Implantation

by Dr Anand Kamalanathan, Dato' Dr Mohamed Hassan Haji Mohamed Ariff

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Avengers Endgame is the most lucrative movie ever made, if not the best, having grossed \$2.798 billion while breaking numerous box office records worldwide. The culmination to the end of the Infinity Saga was a massive deal. So, naturally, to close out one of the most significant events in pop culture history, something truly impactful needed to happen. Ironically, this fell onto the shoulders of the Ironman (pun intended). In the movie's final moments, Tony Stark exclaimed his iconic line: "And I... Am... **Iron Man**". With those final words and a snap of his fingers, our hero saved the day and vanquished the heinous villain Thanos. The source of his powers was centred around the technologically advanced mechanical heart that Tony Stark had implanted.

What if I told you that in our beloved *tanahair*, we already have a specialised team of Avengers at the National Heart Institute (IJN), Kuala Lumpur that have been doing the unimaginable - implanting a palm-sized electronically controlled magnetically levitating device that aids a broken heart in maintaining its cardiac output. However, unlike in the movies, it's not called the Stark's Arc reactor. Instead, it is called a Ventricular Assist Device. Also, these recipients can't fly like Ironman. Yet.



Picture 1: Sourced from Marvel Studios

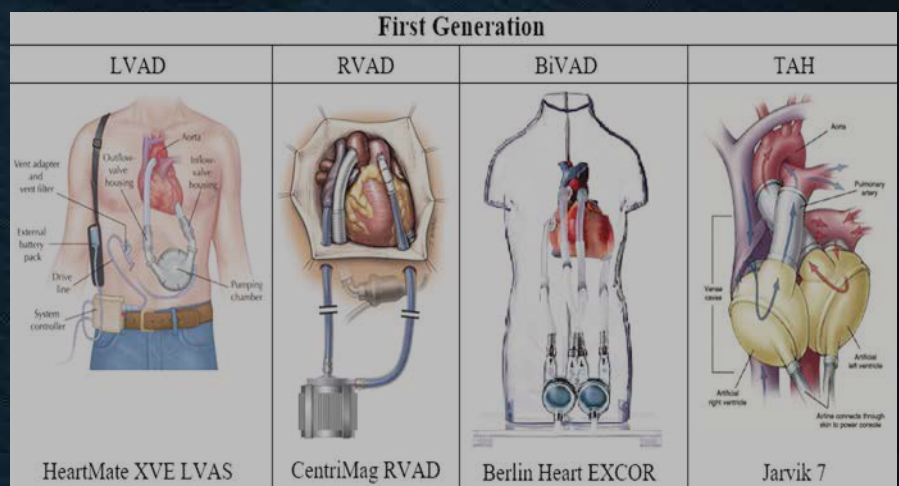
What is a Left Ventricular Device?

Simply put, it is a mechanical circulatory support device that takes blood returning to a failing ventricle and ejects it downstream. It's called an LVAD if the device connects the left ventricle to the ascending aorta, an RVAD if it's connected to the Pulmonary Artery via the right ventricle, and a BIVAD if two devices are simultaneously inserted into both ventricles. When VADs were first developed, they were designed to replicate the native cardiac cycle and generate pulsatile flows using a diaphragm and unidirectional artificial valves.

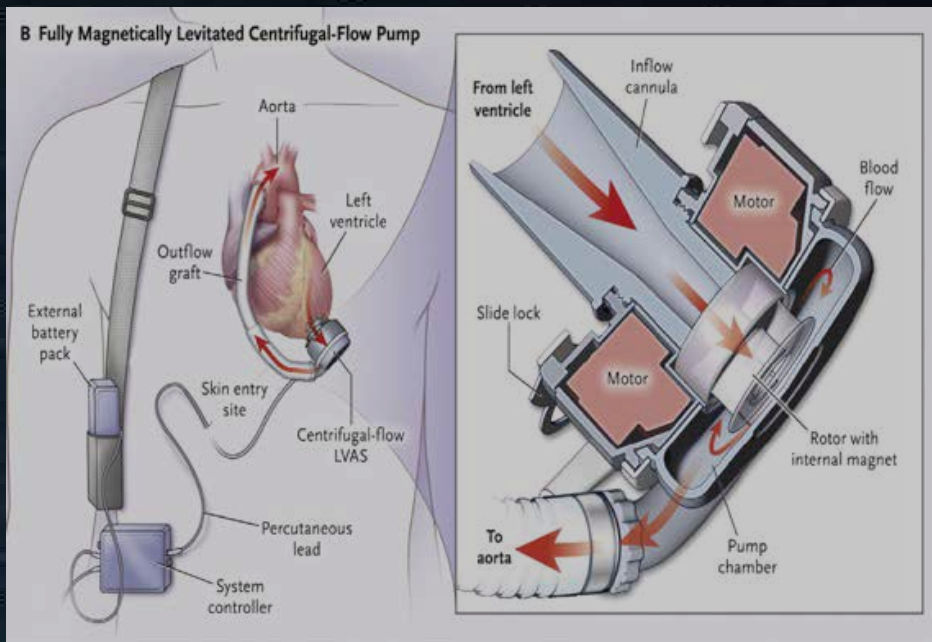
The **first generation VADs** were introduced in the early 1980's and were either pneumatically or electrically driven like the HeartMate XVE (Thoratec, USA) and Berlin Heart EXCOR (Berlin Heart, Germany). These earlier pulsatile pumps were characterized by their large size, heavy weight, and an external driving unit that seriously limited a patient's mobility. But, just like bell-bottomed jeans, they became obsolete and out of fashion.

Research to develop smaller and more reliable devices was initiated in the 1990s. As a result of this work, Thoratec introduced the second generation LVADs in 2001 called the **HeartMate II**, which was just one-seventh the size and one-quarter the weight of the original HeartMate XVE. This radical design change was achieved by integrating a valveless axial pump with a variable magnetic field designed to rapidly spin a single impeller that produces continuous outflow directed in parallel to the axis of rotation. This provided patients with a much better quality of life and fewer mortalities. This device has been implanted more than 30,000 times worldwide with reasonable success rates. However, they were far from perfect, requiring an extensive thoracoabdominal incision, with high rates of pump thrombosis and mechanical failures requiring re-operations.

The **third generation LVADs** are continuous flow centrifugal pumps (CF-LVADs) designed with magnetic levitation of the impeller with



Picture 2: First Generation LVADs (source: Jooli Han et al)



Picture 3: Fully Magnetically Levitated Centrifugal-flow Pump

non-contact bearings and its outflow directed perpendicular to the axis of rotation. These features further reduced device size, noise emission, infection rate, and prothrombotic sites for better patient outcomes and lifestyles. Today, nearly 99% of CF-LVADs are the **HeartWare HVAD** (Medtronic) and the **HeartMate III** (Abbott), which received FDA approval in 2017-2018.

When did we start doing implantation of LVADs: A Brief History of Time in Malaysia

Heart failure (HF) is a fundamental cause of hospitalisation, accounting for about 6-10% of all acute medical admissions and a significant cause of hospital readmissions in Malaysia. HF costs account for approximately 1.8% of total health expenditure, and the gold standard treatment is cardiac transplantation. IJN successfully performed the first heart transplant in Malaysia on the 18th December 1997. To date, IJN has performed 22 heart transplantation, five lung transplantation, and three heart-lung transplantation. However, the scarcity of organ donors is an issue plaguing most of the developing world, and Malaysia is no exception to this rule. Hence, an alternative, albeit expensive method is

the implantation of mechanical circulatory support systems, specifically with VADs.

IJN performed Malaysia's first mechanical heart implantation in July 2005. The first system was the **Thoratec IVAD/PVAD system**, and six patients subsequently received this system. The **HeartWare HVAD** system was introduced in early 2011 and three patients have been implanted. Unfortunately, due to intra-pump thrombotic complications leading to severe neurological adverse events and higher mortality rates, Medtronic has stopped distributing and selling these devices since the 3rd June 2021. However, they have not advised prophylactic explantation of these devices; hence some of them may walk through your hospital doors seeking medical attention. IJN introduced the **Heartmate III** to Malaysia and recently performed its 2nd implantation in August 2022. We wish to share this momentous experience with the anaesthetic fraternity to further create awareness of this programme so that it can benefit the lives of many deserving Malaysians. But who exactly are the profiles of patients who would benefit from such a costly intervention?

Who deserves an LVAD? What are the Patient Selection Criteria?

According to the most recent HF guidelines published by the American College of Cardiology and American Heart Association in 2013, VAD implantation is indicated for patients who have:

- 1) Stage D HF, or NYHA Class IV Congestive HF refractory to maximal medical therapy and conventional CRRT
- 2) Reduced Ejection Fraction (HFrEF) < 25%
- 3) Reduced functional capacity as measured by CPET (maximal oxygen consumption VO_2 14 mg/kg/min)

Who doesn't deserve it? What's the Exclusion Criteria?

Not everyone gets this device, as it's estimated to cost around RM800,000 in total for the device as well as surgery. To ensure the best possible outcomes and justify the cost-benefit analysis, stringent exclusion criteria are upheld by our Multidisciplinary Heart and Lung transplant team (Picture 4), comprising of Consultant Cardiologists, Cardiothoracic Surgeons, and Cardiac Anaesthesiologists. Naturally, those with limited life spans, the elderly with multiple co-morbidities, and other refractory, multi-organ end-stage failures would not benefit from undergoing this intervention.

How do we classify these patients?

Essentially, based on their device strategy into two main groups;

- 1) **Bridge to transplantation (BTT)**: These are suitable candidates for heart transplantation; however, they are still waiting for a donor and currently require circulatory support for a failing heart temporarily.
- 2) **Destination therapy (DT)**: Permanent ventricular support as an alternative to transplantation or in those ineligible for transplantation.



Picture 4: The IJN Heart and Lung Transplant Team

Should I be worried? What are my Perioperative Considerations?

As this isn't an academic write-up and merely a feeble attempt at humblebragging, we shall attempt to summarise the salient points with simple words and plenty of selfies whilst hoping to inspire the younglings in our fraternity into the wonders of cardiac anaesthesia.

Our story starts with a young gentleman, a pharmacist by profession, diagnosed with non-Ischemic dilated cardiomyopathy secondary to myocarditis. A Cardiac Magnetic Resonance study showed global hypokinesia, a very dilated left ventricle with a severely reduced ejection fraction of 18%. Adding to his misery, he had multiple episodes of ventricular tachycardia storms that necessitated the insertion of a single chamber Implantable Cardioverter Defibrillator (ICD). The option of an LVAD implantation was offered by the multi-disciplinary Heart Failure team to

him, albeit with high-risk consent and he agreed to the operation.

Preoperatively, he was admitted to our ICU for optimisation the day before surgery. We inactivated the ICD, attached standard monitoring devices, Bispectral index (BIS), Cerebral Oximetry, defibrillator pads, invasive arterial line monitoring, central venous access, and a pulmonary artery sheath inserted under local anaesthesia. Inotropes like adrenaline and milrinone and vasopressors like vasopressin were started pre-emptively. We did consider the use of intravenous Levosimendan but decided against it simply because his right heart function was not severely depressed, with a TAPSE of 1.8cm. Although many European centres prophylactically start Levosimendan routinely prior to LVAD surgery, the cost was a significant deterrent factor in our setting. Just for context, a single vial of Levosimendan costs RM3000, therefore we decided to use it only if absolutely necessary.

We employed a gentle and balanced cardiac induction technique, utilising the myriad of drugs at our disposal including Fentanyl 5mcg/kg, Midazolam 0.1mg/kg, Ketamine 0.3mg/kg, and low concentrations of Sevoflurane before intubation was successfully carried out. A transesophageal echocardiogram probe was inserted to guide the perioperative management and to rule out conditions that might complicate the surgery:

- a) the presence of shunts like an ASD, VSD, or Patent Foramen Ovale (PFO) - needs to be closed
- b) the presence of Valvular diseases like Aortic Regurgitation or Mitral stenosis - needs to be corrected
- c) the presence of thrombus - deleterious stroke and neurological complications

Subsequently, the surgeon performed a midline sternotomy and anatomical dissection until the aorta and vena cava had been cannulated. With cardiopulmonary bypass initiated, the HeartMate III device was gradually implanted. The first piece to be sutured was the ring of the apical cuff, attached into the apex of the left ventricle. All of this was done on a beating heart. An LV vent was not inserted to avoid a potential air embolism.



A double-tunnel technique for the driveline was done to reduce the risk of infections.

Subsequently, coring of the muscles of the LV apex was done, to create a hole for the inlet cannula. This inflow cannula was then connected to the ring and the

distal end of the outflow Daflon graft is connected to the Heartmate3 (HM3) (Picture 6). The proximal end of this outflow graft was anastomosed to the ascending aorta.



Picture 6: Connecting the inflow cannula to the HM3

Transesophageal echography at this point was crucial to detect the position of the inlet cannula. It should point in the direction of the mitral valve (Picture 7). Any deviation of this cannula towards the septum can cause catastrophic suction events, which will cause the pump to shut down and the heart to immediately lose cardiac output. Complete de-airing was also extremely important before weaning off bypass. An assessment of the Right Ventricular (RV) function was done as all these patients have a high risk of RV dysfunction.



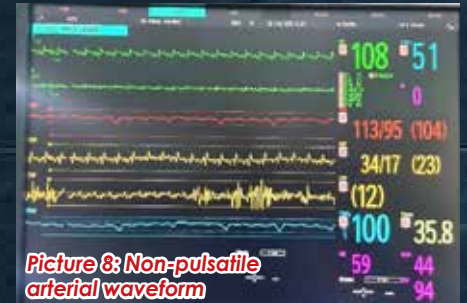
Picture 7: TEE (4 chamber view) with the inflow cannula facing the mitral valve

After everyone was happy with the TEE findings, we began weaning off bypass, and simultaneously the flow of the HM3 was started slowly (1-2L) to avoid overflow of the RV by the LVAD. During this phase, our inotropes and vasopressors were started and hemodynamic parameters were closely monitored (central venous pressures, pulmonary artery pressures, and cardiac output). After several minutes of stabilisation, the LVAD flow was gradually increased to achieve a flow of

5-6L. We had inhaled nitric oxide on standby in case the RV function deteriorated rapidly. However, in this patient, IV milrinone at 0.5mcg/kg/min was sufficient. Complete weaning of bypass ensued, haemostasis was controlled after transfusion of three pints of packed cells and a cycle of blood products was completed. He was successfully sent to the ICU for postoperative care within 6 hours of induction. He was extubated on post-op Day 1 to High Flow Nasal Cannula with PCA fentanyl for post-op pain relief. IV Octaplex and Novoseven were kept close but never required, thankfully.

Now for a post-LVAD implantation patient, since there is no pulsatile flow from a poorly contracting heart, the arterial line waveform will naturally be non-pulsatile (Picture 8). Hence, this might be the only time when you have a pulseless patient but one that can still smile and laugh coherently with you.

And no, you do not have to be afraid, this patient is well and truly still alive. Please do remember this, if you're ever called to attend a resuscitation concerning a patient on LVAD, the mean arterial pressures are a more reliable marker of resuscitative efforts.



Picture 8: Non-pulsatile arterial waveform

In a nutshell, satisfaction lies in the efforts and not the attainment. For a monumental task such as LVAD implantation surgery, it takes a village to raise this child. But alone, one can do so little, and it's only together that we can do so much. A dedicated team willing to go the distance is crucial to the success of any LVAD programme.



Picture 9: The Master Jedi along with his padawans

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Cricoid Pressure in Rapid Sequence Induction: Is it Time to Release the Pressure?

by Dr Kean Seng Cheah

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"Are you pro or against cricoid pressure"? This was the exact poignant question that sparked a short debate among my colleagues during our theatre tea break.

Sellick first demonstrated cricoid pressure in the cadaver to prevent reflux of gastric content from reaching the pharynx in a small case series in 1960.¹ He later reported applying this technique to 26 high-risk patients, of which he found that 23 patients did not report regurgitation before, during or after intubation. Three of his patients had regurgitation upon release of cricoid pressure. He published his findings in the *Lancet* which subsequently received recognition worldwide; it was rapidly included as a "standard of care" for rapid sequence induction (RSI). This manoeuvre was named after him - The Sellicks manoeuvre (Figure 1).

Fast forward six decades since its introduction, the evidence-based recommendation to apply cricoid pressure to prevent gastric regurgitation and aspiration remained at level 4 (evidence based on case series) and Grade D recommendation (weak evidence and practice with caution). Many anaesthetists advocate the abandonment of cricoid pressure, but some still hold on to it due to a somewhat unwarranted fear of aspiration. The 2015 guidelines for managing unanticipated difficult intubation in adults from the Difficult Airway Society still recommend cricoid pressure as routine standard practice.² Still, some professional associations have been moving away from this practice

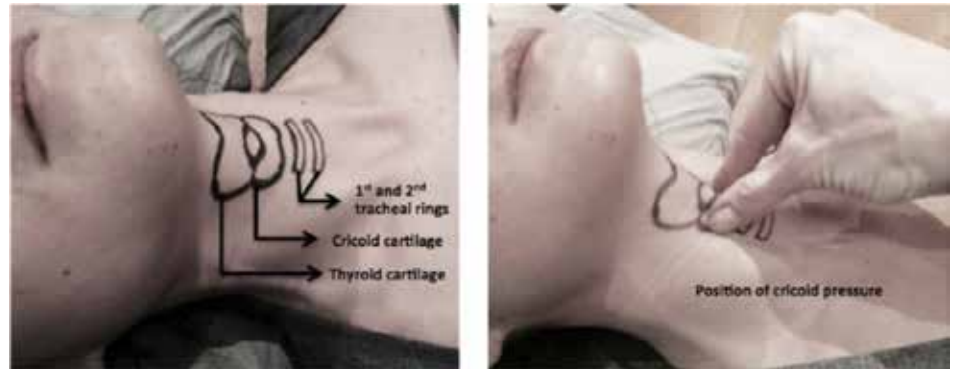


Figure 1: Applying Sellick's manoeuvre (Source WFSA)

recently. Clinical practice guidelines from the Scandinavian Society of Anaesthesia and Intensive Care in 2010 no longer recommend cricoid pressure as mandatory but can be used with individual judgement.³ European Resuscitation Council removed cricoid pressure as routine practice in RSI. If cricoid pressure is used, it should be adjusted, relaxed or released if it impedes ventilation / intubation.⁴ Germany was one of the first countries to design national guidelines on airway management in 2004. In 2015, the German Society of Anaesthesia and Intensive Care revised its recommendation to omit cricoid pressure after weighing up the potential risks vs benefits.⁵ However, none of the guidelines adopts a firm policy to eradicate cricoid pressure altogether. In other words, do it at your own responsibility and risk.

After all these years, none of the studies provided convincing evidence that cricoid pressure is effective in preventing aspiration.⁶ Not only does the risk of aspiration not increase in the absence of cricoid pressure, but aspiration still occurs in cases where cricoid pressure is applied correctly.⁷ Cricoid pressure has

been proven to worsen laryngoscopic views and ventilation.⁸ Inadvertent excessive force by airway assistants, especially junior personnel, results in complete airway occlusion, increasing difficulty visualising the vocal cords. This relationship between cricoid pressure and laryngoscopy is complex with several reports showing worsening of laryngoscopy views with cricoid pressure even in a patient with an excellent initial view.⁸

Why it made sense historically but not in the modern day?

Looking back on his publication, there was a good reason why Sellick designed this technique to avoid gastric reflux during intubation. From his original description, Sellick used cricoid pressure with manual ventilation before securing the airway because it was the "standard practice" in his time. It was not until 1964 that both Wylie and Stevens proposed that ventilation should be delayed until tracheal intubation was completed. Sellick made an excellent initiative by modifying his anaesthesia technique, but this practice was based on small case series 60 years ago that no longer augurs well in the 21st century. Many raised questions about his technique

with doubts about more harm than good being done to the patient.

Sellick positioned his patients in the Trendelenburg position to demonstrate regurgitation clearly and, if present, to actively apply cricoid pressure to prosper its benefits. Obviously, this is not the standard practice in the current day. The lack of information on the method of anaesthesia and the applied force of cricoid pressure used remained questionable. Based on findings from Sellick, how closely can we relate the lower sphincter and intragastric pressure from cadaveric studies to actual patients? After all, the dynamic process of sphincter tone and gastric pressure in an actual patient is hard to replicate in the non-responsive tissue of the cadaver. Many narrative reviews, correspondents, randomised control trials and systemic reviews have shown that cricoid pressure is ineffective in preventing aspiration, so is it time to let go of your pressure?

Why is cricoid pressure not practical all the time?

Reports have shown that regurgitation can still occur despite cricoid pressure applied correctly.⁷ One of the reasons is that the cricoid cartilage and oesophagus are not aligned directly in some people. In their paper, Smith et al.⁹ reported that one-half of volunteers have their oesophagus displaced laterally in MRI/CT imaging in normal circumstances, so cricoid pressure further displaced the oesophagus in 90.5% of subjects, to the left in 69.4% and to the right in 21.1%. This lateral displacement of the oesophagus often results in ineffective cricoid pressure.

Another good reason that hampered the success rates of cricoid pressure is the human factor. Many anaesthetists failed to generate correct cricoid pressure reliably.

How much pressure is needed to generate a force of 10N and 30N?

Is it the same between male and female operators?

Or same in all patient groups?

The statement "Cricoid pressure should be applied at a force of 10N when the patient is awake and increased to 30N when asleep" is often easy enough to comprehend but difficult to perform correctly. In one simulation experience done by an experienced operator,⁹ out of 114 attempts of target force 30N cricoid pressure, only 15 (13%) were successful, and 35 (31%) fell in the range of 25-35N. This sum up to 44% in total. It means whenever cricoid pressure is applied, 56% of the time we are not getting in the range of 25-35N. It is not surprising if the outcome is even more inconsistent regarding actual patients with variable neck anatomy. "The art of firm pressure on cricoid" takes more than just the operator's finger and more than a few seconds of education. It involves multiple education, training, simulation and repetition until we achieve satisfying consistency. Although the quality and accuracy of cricoid pressure improves following education and training, it is still almost impossible for the human subject to achieve pre-defined proficiency in cricoid pressure from one study.¹⁰

We need more robust evidence for commitment

For cricoid pressure to be effective and safe, it takes more than just achieving accurate pre-fixed tension. It depends on the patient factor and the person who is performing intubation. To reliably perform this study will require many standardisation factors; to compare two groups of patients with or without cricoid pressure while ignoring the other factors is difficult to make a meaningful interpretation and conclusion. Many anaesthetists use a force of 30N for

cricoid pressure, but is it really safe to use 30N for everyone in general? Should we use higher pressure in an obese patient with a thick neck fold? Similarly, should we use lower pressures among low BMI and paediatric patients? Should we use lesser force in the presence of nasogastric tubes or the head-up position?

Suppose cricoid pressure is not proven to be reliable and effective in preventing aspiration but likely results in more complications. In that case, all guidelines should be firm in its phrase rather than leaving two confused minds. After all, we as clinicians always refer to our respective guidelines for good clinical practice. Not only that, clinical guidelines often have medico-legal implications.

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Simulation in Medical Education

by Dr Nicholas Lee Kwan Tuck

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"To err is human". But how many medical errors can we afford? In the United States, there are nearly 400,000 deaths due to preventable medical errors each year, not to mention another 3.5 million disabilities due to non-fatal iatrogenesis. In Malaysia, there are no statistics to show the exact number of fatal medical errors, but the numbers could be alarming. The physical, mental, and emotional impact as well as the immense socioeconomic and financial burden are distressing to the patients, carers, and society as a whole. One of the reasons for such alarming statistics could be attributed to our medical education culture, where traditional apprenticeship was adopted as the standard of clinical education.

The introduction of simulation-based medical education could be the paradigm shift in how medical education is conducted. Simulation, by definition, is a method or technique that is used to produce an experience without going through an actual event. Simulation replaces and amplifies real-life experience, provides an interactive and immersive environment, and replicates substantial aspects of the real world. Fidelity refers to the degree to which simulation resembles reality.

Simulation in medical education has long been established since antiquity across cultures by the use of anatomical models and cadaveric tissues. The modern adoption of simulation in medical education is owed mainly to three major movements: the resuscitation movement, the introduction of anaesthetic simulators, and medical education reform. Simulation training is rapidly evolving

with the advancement of technology, the acceptance of simulation as a mode of medical education and training as well as the adoption of simulation in official examination and medical licensing.

In Malaysia, the Malaysian Society for Simulation in Healthcare (MaSSH) was officially established on 19th December 2016 to serve as a platform for simulation enthusiasts to pool expertise, share resources, and promote simulation-based teaching in the country. The emphasis on simulation in medical training can be seen when simulation training for anaesthetic crises was listed as one of the pre-congress workshops during the recent Annual Scientific Congress 2022 Malaysian Society of Anaesthesiologists and College of Anaesthesiologists AMM.

The simulation training for the Anaesthetic Crises Pre-congress Workshop was held recently at Shangri La Hotel, Kuala Lumpur on 4th August 2022. The workshop aimed to provide a hands-on learning experience to participants through participation in immersive simulation scenarios. The workshop's objective was to enable participants to further improve their technical and non-technical skills. The workshop involved participants working in teams while managing various anaesthetic crises, with allocated times for pre-briefing and debriefing. Most importantly, a team of trained facilitators provided a safe learning environment to support the participants. The organisers were glad to have received participation from various groups of medical personnel, from junior doctors to consultant anaesthetists. The

workshop would not have succeeded without the provision of high-fidelity mannequins from Laerdal Medical.

Simulation training is nothing new. Highly hazardous industries like aviation have long embraced simulation-based learning models in their training. Simulation provides a safe and controlled environment to develop problem-based learning modules and for trainees to practise competencies to the highest standards. Training modules can be standardised and reproducible to suit different levels of expertise. Trainees will also get the opportunity to train in high-risk conditions rarely experienced in real life. All in all, they have resulted in a drastic reduction in aircraft accidents. Simulation has thus been formally incorporated into civil aviation for certification and licensing.

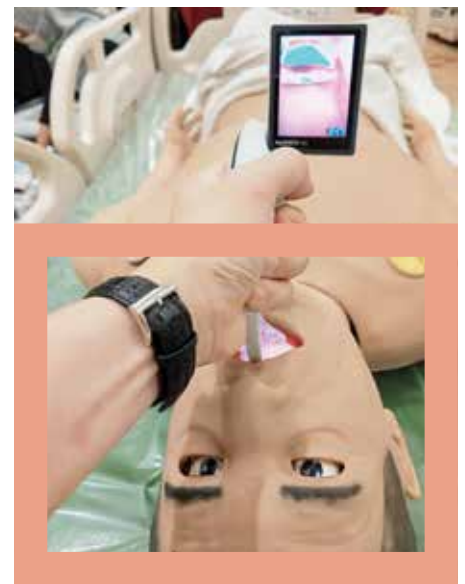
The modern era of medical simulation dates back to the early 1960s when Ausmund Laerdal, a plastic toy manufacturer, designed a realistic simulator named Resusci-Anne to teach mouth-to-mouth resuscitation. This is the cornerstone for the modernisation of simulation in medical training. The application of technology, software, and computerised systems have further provided more life-like simulators for a better learning experience. Simulation is



not only conducted using life-like mannequins. Standardised patients, in which actors are trained to simulate particular clinical cases, were adopted as part of simulation training. With the advancement of technology, we are seeing more interactive and innovative simulation training modules for a more realistic experience.

Andragogy, the science of adult education differs from the pedagogical method employed in traditional medical education. It focuses on key aspects such as improving motivation and providing adequate guidance during the learning processes. Knowle's adult learning principles also highlight the importance of problem-centred learning in contrast to content-centred learning. Hence, simulation in medical education fulfils the need for adult education that focuses on problem-based learning, with constant feedback and reflection for a more engaging learning experience.

The staggering number of preventable medical errors causing death and disability has called for a revamp of medical education and training. The traditional apprenticeship model of medical teaching has been practised for centuries, in which trainees gain early exposure to patients and are taught 'hands-on' under the supervision of medical officers, specialists, and consultants in a hierarchical system. However, inevitably, trainees sometimes cause preventable harm to patients in the process of training, especially while performing risky procedures. This would contradict the bioethical principle of "First Do No Harm" or "Primum non-nocere" taught to all healthcare professionals. Furthermore, iatrogenic complications could negatively impact trainees, causing emotional distress, guilt, loss of confidence and impeding their future endeavours. Simulation training provides a safe environment for



trainees to learn, practise and improve their medical skills to be better equipped for clinical encounters, hoping to reduce unnecessary harm to the patient. During simulation training, trainees can gain exposure to rare but high-risk scenarios in which they could repeatedly practise their clinical skills. For example, malignant hyperthermia is a rare anaesthetic crisis that is rarely seen, but catastrophic if not managed appropriately. Simulation training provides a platform for trainees to improve their knowledge, reflect on their shortcomings and familiarise themselves with the management algorithm before encountering a crisis.

The introduction of the Objective Structured Clinical Examination (OSCE) by Professor Harden in 1979 changed how medical examination is conducted worldwide. With its ability to evaluate different clinical skill domains separately, the OSCE has become an indispensable component of healthcare students and professionals' assessment tools. Simulation, using the OSCE, plays a fundamental role in evaluation in medicine. It overcomes the variability of real scenarios with reproducible, standardised plots. It also reduces the inconvenience of using actual patients by having "standardised patients" who are trained actors to simulate particular

clinical cases. Simulation ensures standardised assessment of performance and competencies, and tailors the level of complexities to the target examinees.

Aside from being an integral learning tool for conventional medical skills, simulation can be incorporated into medical education for the training of non-technical skills which are often neglected in traditional education. The essential skills of teamwork, optimal communication, professionalism, and crisis management can be acquired via simulation. It is an innovative approach to learning from mistakes. Mistakes are acceptable and are in fact encouraged, for trainees to learn, reflect upon and improve themselves. This is in contrast to conventional teaching which strives for perfection and is free of errors.

There are various modalities of simulation available. These are broadly categorised into five major groups, namely low technology (relatively low cost) simulators, screen-based computer simulators, standardised



patients, complex task trainers, and realistic patient simulators. Choosing the right modality of simulation to achieve the greatest positive outcome depends largely on the target trainees, previous background, and the intended educational goals. In developing nations, financial restrictions and resource limitations are usually hindrances to getting the right modalities for simulation. These limitations to simulation, however, are not unsurpassable, where the art of simulation is tailored according to the available resources and innovation.

COVID-19 pandemic over the past few years has limited the clinical exposure of students and residents in their clinical training due to lesser patient contact and lesser hands-on experience. This together with the growing evidence of the transitioning of medical training towards simulation are good opportunities to galvanise the momentum towards simulation in medical education. The MaSSH thus plays an imperative role in promoting healthcare simulation across the country by pooling resources and expertise to overcome the obstacles faced by simulation training.



In Malaysia, simulation centres are set up in universities and hospitals for the training of undergraduate students as well as medical personnel in various fields. The financial burden for setting up simulation centres, high maintenance cost for expensive technology, and staff training are the few limitations that impede the growth and expansion of simulation training in the country. The resistance and delay in employing simulation training in medical education are also due to ambiguity regarding its consistency and validity. The unprecedented

Medical education is intensive and extensive. Medical professionals are expected to be proficient, efficient and effective. With a rapidly changing landscape in healthcare delivery, keeping up with the standard of care is of paramount importance. Measures must be taken to ensure patient safety and deliver the highest quality of care. The first step to this depends on how well medical professionals are trained. A growing body of evidence shows that simulation in medical education could fill the gap of what conventional medical education lacks; hence its adoption into medical training should be advocated at all levels of medical training.

It's Getting **HOT** in here: A Tale of Two Cities with Suspected Malignant Hyperthermia

by **Dr Anand Kamalanathan, Dato' Dr Mohamed Hassan Haji bin Mohamed Arif, Dr Rozaini Hassan**
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The sixties marked an era most notorious for the British invasion of pop culture, with the Beatles and the Rolling Stones distinguishing themselves as the most popular bands emerging of their time. Tragically, this decade also marked the demise of two influential world leaders - Mr Martin Luther King and President John. F. Kennedy. Interestingly in the quaint city of 1960s Melbourne, a young man by the name of Roy Evans was about to make history as well, possibly even more influential than the names above primarily in the eyes of the anaesthesiologist.

The story of Roy Evans began when he was hit by a car on 8th April 1960 just outside the Royal Melbourne Hospital, sustaining a compound fracture of his tibia and fibula. Upon hearing the news, his mother dramatically rushed to the hospital, and her heightened level of anxiety should be forgiven given that she yelled at the emergency that her family had a history of 10 inexplicable deaths under general anaesthesia. The anaesthetist, Dr Jim Villiers, remembers it slightly differently. He and the orthopaedic surgeon, Dr Kingsley Mills, both honorary specialists at the Royal Melbourne, had a regular afternoon operating list together. When he arrived on that particular afternoon the orthopaedic registrar was sitting in the corner of the tea-room and gave Dr Jim Villiers the news that is familiar to all anaesthetists: "We've added a case to the list". The patient was a young man with a broken leg with "some strange story about ten relatives dying from ether anaesthesia".



Picture 1: Roy Evans the first person to survive MH

Dr Villiers decided to avoid ether altogether, use a thiopentone induction cautiously and maintain anaesthetic with halothane and Nitrous Oxide. He used all the monitors available to him - namely, a blood pressure cuff and a heightened state of anxiety. However, within minutes of induction, it was clear that this strategy was a disaster: Roy's blood pressure fell and his pulse rate skyrocketed. He was as warm as an oven and hyperventilating three times as fast. Dr Villiers turned off the Halothane instinctively and noticed that even the soda lime canister became smoky hot. Dr Mills hastily reduced the fracture and closed the wound upon the anaesthetist's instructions. Dr Villiers thought there might have been blood loss due to the fracture and possibly a panicking surgeon, so a blood transfusion was commenced. As Roy had now reached dizzying temperatures of 40°C, he was packed from head to toe with ice from the canteen refrigerator. Within an hour from the commencement of the operation, Roy was awake and alert. Miraculously he recovered completely, becoming the first man to survive what is

known today as Malignant Hyperthermia (MH). Roy's family was investigated by Dr Michael Denborough, an internist and research fellow interested in genetics, who noted that the pattern of deaths appeared to follow an autosomal dominant inheritance. He later determined that serum creatine phosphokinase (CK) levels were elevated in many family members. Denborough's publication was the first to suggest that an inherited syndrome could cause an anaesthetic-induced fatal hyperthermic crisis.

Unexpected fever during anaesthesia has been described since the beginning of the twentieth century. The very first cases of MH were reported by several workers on a single page in the Journal of the American Medical Association in 1900. By the mid-1960s, many similar cases had been reported worldwide, especially in the United States of America and Canada. The chief of Anaesthesia, Dr RA Gordon, probably named this syndrome. He and Dr Beverly Britt organised the first symposium on MH worldwide, published in the Canadian Journal of Anaesthesiology in 1966. The name of the syndrome soon came to denote a dominantly inherited condition marked by elevated temperature, muscle rigidity, acidosis, muscle breakdown and death, if untreated. The patient mentioned above had no outward signs of susceptibility but during exposure to certain gas anaesthetics and the paralyzing drug succinylcholine, those classical signs would be displayed. By the mid-1980s, MH was more or less defined by its clinical signs and its

reversibility with Dantrolene. Further studies demonstrated that isolated muscle from MH-susceptible (MHS) patients would develop increased muscle tone (a contracture) when incubated with either caffeine or Halothane in the laboratory.

Fast forward to August 2022, we recently encountered a peculiar yet similar case in our practice. A beautiful three year old girl, weighing a healthy 13.7 kilograms had been diagnosed with a small Perimembranous Ventricular Septal Defect (VSD). She came in for a seemingly straightforward elective closure of the VSD. She was otherwise well, with no family history suggestive of prior surgical complications. However, our surgeon reminded us a week before her surgery that, much to his chagrin, her previous operation two years ago had been cancelled on table for an anaesthetic immediately after induction.

Upon reviewing her old notes, we noted that after what seemed like a routine induction with intravenous ketamine, pancuronium and maintenance with Sevoflurane; ten mins after successful intubation and central line insertion, she developed high-temperature spikes up to 43°C with severe tachycardia that didn't resolve despite active cooling measures. Adequate analgesia and depth of anaesthesia were achieved, and no muscle rigidity or spasms were noticed. Her End-Tidal CO₂ wasn't obscenely elevated at 47mmHg despite adequate minute ventilation, and her Arterial blood gas showed no hypercapnia, acidosis or hyperkalemia. Other causes like anaphylaxis and sepsis were considered and ruled out. The consultant in charge made a preemptive diagnosis of MH, and a single bolus of Intravenous Dantrolene was served as per protocol about 15 minutes later. Miraculously her temperatures and heart rate normalised

within 30 minutes; she was extubated in PICU later that day and discharged home well with normal Creatine Kinase levels. She was then referred to a Consultant Clinical Geneticist at the Department of Genetics, Hospital Kuala Lumpur, who conducted further investigations.

- 1 Patients with high-risk status confirmed by the presence of a genetic variant pathogenic for MH susceptibility or by a positive *in vitro* contracture test.
- 2 Blood relatives of an individual with a confirmed MH susceptible diagnosis.
- 3 Patients with a personal or family anaesthetic history which may implicate MH.
- 4 Patients with clinical myopathy who have a genetic aetiology involving a gene implicated in MH susceptibility (RYR1, CACNA1S, STAC3).
- 5 Patients with a genetic variant of unknown significance in genes implicated in MH susceptibility (RYR1, CACNA1S, STAC3).
- 6 Patients with otherwise unexplained rhabdomyolysis, especially with a history of recurrent rhabdomyolysis [46,47].
- 7 Patients with idiopathic hyperCKaemia.
- 8 Patients with otherwise unexplained exertional heat illness [48,49].

Picture 2: Patients with increased risks of developing MH if exposed to triggers

The gold standard of caffeine - halothane - contracture test (CHCT) and muscle biopsy for evaluation of MH susceptibility is not available in Malaysia. She instead underwent a detailed genetic blood testing by the company INVITAE Diagnostics in the United States. A week later, the results gave us more questions than answers, as it showed variant(s) of uncertain significance detected in 2 out of 3 genes, specifically in CACNA1S and RYR1 genes respectively. However, as described in the Malignant Hyperthermia Guidelines 2022, these patients are at increased risk of developing MH if exposed to triggering agents (Picture 2). Unfortunately, the costs and technical difficulties associated with conducting rigorous functional analyses are rate limiting. Although more than 180 RYR1 variants have been associated with MH susceptibility, only 33 have been shown to have functional effects consistent with MH pathogenicity (www.emhg.org). Two variants in CACNA1S have also been shown

to be functionally consistent with pathogenicity.

Preoperative Planning

Every anaesthetist knows that all the potent inhalation agents available for general anaesthesia (e.g. Desflurane, Sevoflurane, Isoflurane, Halothane, and Methoxyflurane) and the depolarising neuromuscular blocking agent succinylcholine are triggers for MH crises. Armed with this knowledge, we formed a multidisciplinary team, decided to go ahead with the surgery, and obtained high-risk consent from her parents. We devised an anaesthetic plan based on the latest shreds of evidence available, primarily from the Consensus Guidelines on Perioperative Management of Malignant Hyperthermia Suspected or Susceptible Patients from the European Malignant Hyperthermia Group, published in the British Journal of Anaesthesia in 2021. Our trigger-free anaesthetic method of choice was using a propofol-based Total Intravenous Anaesthesia (TIVA) with Remifentanyl.

Our second dilemma was the unknown concentrations of residual volatile anaesthetics that might trigger a crisis in our existing anaesthetic workstations. Since manufacturers' instructions differ considerably, there are uncertainties about how individual anaesthetic machines or workstations must be prepared to avoid accidental exposure. Hence, there is no universal protocol for consistent washout time to sufficiently remove volatile anaesthetic contamination in the breathing circuit. The aim is to keep inspired volatile anaesthetic concentrations at five ppm or less.

This threshold is commonly accepted as 'safe' regardless of country-specific legal standards. Three methods can achieve this;

(A) Purchasing an utterly new anaesthetic machine for MH susceptible patients - this approach doesn't make sense economically or even logically

(B) Flushing out the system with high-flow Oxygen over a long time but, even then, the newer modern machines have many complex internal parts made from rubber and plastic that can absorb anaesthetic vapours for an undetermined period.

(C) Using a mechanical ventilator never exposed to anaesthetic agents such as the ones used in the ICU.



Method B: How should we prepare the Anaesthetic machine?

(Recommendations from the European MH Group consensus)

- i. Vaporisers should be removed before the anaesthesia machine is flushed.
- ii. Anaesthetic breathing circuits (Circle circuit, and reservoir bag) and soda lime should be changed for uncontaminated equipment before the anaesthesia machine is flushed.

iii. Anaesthesia machine and breathing circuit should be flushed with a maximum fresh gas flow of at least **10L/min** (oxygen, air, or any mixture) for **at least 60 minutes**.

iv. The tidal volume can be set at 600 ml and ventilatory frequency at 15 bpm for an adult patient when flushing.

v. Activated charcoal filters effectively reduce volatile anaesthetic concentrations to <5 ppm, may be used to minimise anaesthesia machine preparation time.

We chose Method C since it's the most effective at isolating volatile agents and the least labour-intensive (Picture 3). Since this surgery requires the usage of cardiopulmonary bypass, the perfusionists were briefed the day before and tasked to disconnect the vaporiser on the pump.



We are fortunate to have an MH emergency kit available at all times in our ICU. It is advised to have a routine check the day before surgery is advised to examine for the expiry date and stock availability (Picture 4). Current evidence suggests to focus on trigger-free anaesthesia rather than unnecessary routine prophylactic use of Dantrolene preoperatively, as it results in more adverse effects such as:

- Musculoskeletal System:
 - Limb weakness, loss of grip strength, dyspnoea, dysphagia, photosensitivity.

■ Central Nervous System:

- Drowsiness, dizziness, headache, confusion, nervousness, insomnia, seizure.

■ Cardiovascular System:

- Tachycardia, exacerbation of cardiac insufficiency.

■ Gastrointestinal System:

- Diarrhoea, anorexia, nausea, vomiting, abdominal pain, GI bleeding, constipation.

No special blood tests are required preoperatively for patients suspected of MH. However, preoperative measurement of creatine kinase activity or serum potassium and myoglobin concentrations may be reasonable if there is a history of elevated resting creatine kinase concentration, muscular symptoms (cramps and myalgia), or rhabdomyolysis. Imaging studies were carried out as per standard protocol.

Perioperative surgical stress has not been shown to be a trigger for MH crises. Therefore the indications for pharmacological premedication are the same for MH-susceptible patients as those not predisposed to MH.





Picture 7

Now comes the fairly "routine" part of our management, accompanied by extra vigilance and caffeine-induced hyperactive senses. Peripheral lines were inserted preoperatively the day before in the ward. General anaesthetic induction was achieved with IV Ketamine 2mg/kg with IV Glycopyrrolate 4mcg/kg given at the airlock. This technique has been shown to reduce the pain associated with Propofol, as well as the distressing cry that might upset the mother, child and the anxious anaesthetist but may affect BIS values preoperatively.

After the child had been ushered into the OT, we quickly established essential monitoring and preoxygenation via a separate oxygen tank and bag-valve mask, with only the End-tidal Capnography connected to our GA machine (Pictures 5 and 6). General anaesthesia was maintained with TCI Propofol using the Paedfusor model. We used Fresenius Kabi's Agilia SP TIVA pump to target effect-site concentrations of 3-5 mcg/ml. Following administration of muscle relaxant and intubation, we used Remifentanyl once a triple lumen was established via a mass rate infusion

targeting concentrations of 0.3-0.5mcg/kg/min depending on surgical stimulation. Only for sternotomy did we perceptively crank up the Remi to 1.0mcg/kg/min. Subsequently, we titrated Propofol and Remifentanyl based on our Bispectral Index (BIS) values. One limitation in our depth of anaesthesia monitoring was that we did not have the paediatric sensors available; hence we applied the adult sensors along with Cerebral Oximetry (Picture 7).

Throughout the surgery, we kept consistent BIS values with very stable hemodynamics using IVI Noradrenaline 0.05-0.1mcg/kg/min and IVI Milirone 0.4mcg/kg/min. Once we went on cardiopulmonary bypass and cooled down to 32°C, the BIS values dropped as well, so we titrated our TIVA accordingly. The pharmacokinetics of Propofol during CPB are not fully understood and evidence is equivocal at best. However, many studies have demonstrated that PK model-based TCI systems for Propofol can be safely and effectively used both during and after CPB.

Upon rewarming, we optimised all parameters and smooth weaning off CPD ensued. The chest was eventually closed successfully and the patient was transferred to the Paediatric Intensive Care Unit (PICU) with minimal vasopressors and Propofol being used as sedation via fixed-rate infusions. Fast-track protocols were employed as per the VSD pathway algorithm and she was extubated within 4 hours

postoperatively. Remifentanyl was continued postoperatively at a fixed rate infusion even after extubation. We reminded the PICU team not to give a bolus dose of any infusion pumps as a precaution. The child was discharged well later that week, and the parents, the anaesthetists and especially the surgeon were equally ecstatic (Picture 8).

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Picture 8 : The anaesthetic team responsible for keeping this patient safe and the picture-shy surgeon sane

Revisiting Desflurane and Nitrous Oxide Use in General Anaesthesia

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Anaesthesia is an art and no single general anaesthetic method can give the gold standard for theoretical benefits. Anaesthesiologists practise anaesthesia and gain personal experience every time they induce and reverse patients. Until now, using general anaesthesia with an inhalational agent and Total Intravenous Anaesthesia (TIVA) confers almost similar benefits. In addition, comparing outcomes using Desflurane versus sevoflurane also appears to be non-inferior.

Revising pharmacology, Desflurane is about one-third the potency of sevoflurane with low lipid solubility. The minimal alveolar concentration (MAC) of Desflurane is 6.0%. Moreover, the blood/gas partition coefficient is 0.42, which translates to faster emergence and extubation benefits. Desflurane also offers less hypotension, less bradycardia and reduced CMRO₂ leading to a lesser risk of elevation in Intracranial Pressure than other volatile agents. Thus, it is increasingly used in Neuroanaesthesia and not to forget its environmental benefits with the use of low flows. However, it is relatively contraindicated in non-intubated paediatric patients with a higher incidence of moderate to severe upper airway adverse events as well as a high risk of laryngospasm and Malignant hyperthermia. Desflurane also carries the risk of sympathoexcitation, hypertension, and tachycardia without a proper method of administration.

Conduct of General Anaesthesia

The administration of intravenous fentanyl may be considered first at the airlock, especially for day care surgery - 100 mcg to ensure peak effect during intubation as the peak effect for fentanyl is about 10 mins. Preoxygenation with standard induction and manual bag-mask ventilation can also be done with Desflurane while waiting for the full effects of the muscle relaxant. I recommend switching off the gas during intubation to reduce environmental pollution. Do not worry

about low MAC values because the propofol effect is likely to be still in play.

IV Rocuronium 10 mg may be given for Supraglottic airway (SGA) insertion as it may help reduce propofol dosage. At the same time, ensure Sugammadex's availability. After plastering the ETT, dial the fresh gas flow up and increase the Desflurane concentration until MAC is up to 0.7-1.0. With low-flow anaesthesia during induction, we can still achieve fast fractional inspired gas to achieve MAC of 0.7-1.0, during the wash-in phase with nitrous oxide.

Then, give IV Granisetron 1mg as its half-life is 8 hours. It can be considered given in combination with IV Dexamethasone 4-8mg before general anaesthesia and induction before IV morphine analgesia dose.

Maintenance - Aim MAC of 0.7 is enough to prevent awareness, especially in the elderly. Titrate morphine dose adequately and maintain inhalational with Desflurane with the 1.2-2-litre gas flow with nitrous oxide.

Reversal - Once the patient exhibits spontaneous breathing or signs of diminished muscle relaxant effects, you may give reversal agents, then dial down the volatiles while simultaneously administering 100% oxygen. We prefer to give IV Sugammadex as the reversal agent. However, intravenous Atropine 0.02 mg.kg⁻¹ and neostigmine 0.05 mg can be used to reverse neuromuscular blockade. Then, you can switch the ventilator to spontaneous assisted ventilation modes or completely turn off Positive Pressure ventilation (IPPV). Always look for and recognise signs of inadequate reversal, for example, high respiratory rate with inadequate tidal volumes and consider the qualitative and quantitative assessments for adequate reversal.

The aim of general anaesthesia is to ensure adequate pain relief. We may

consider the use of IV Remifentanyl infusion in major surgeries to prevent opioid-induced postoperative nausea and vomiting (PONV). However, even in female laparoscopic surgeries, we can still use nitrous oxide without increasing the risk of PONV. The benefit of nitrous oxide is that it acts as a carrier gas, otherwise termed the second gas effect and has analgesic properties. Furthermore, the use of anti-emetics can alleviate the susceptibility to PONV associated with nitrous oxide anaesthesia. So far, based on our experience, this technique of administering Desflurane with nitrous oxide does not seem to increase the risk of PONV or awareness.

Conclusion

Anaesthesia providers may consider the methods described above in their daily practice to reduce confusion from various methods available in the literature. Anaesthesia is an open horizon since different experiences, techniques, methods and practices differ from hospital to hospital; be it drug preference, the timing of drug administration and dosage. Therefore, knowledge and information sharing allow us to open our eyes and learn from different centres towards perfecting our anaesthetic practices.

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ICU DIARY:

Helping Patients Fill the Gap of 'Memory Lost' in the ICU

by Dr Kean Seng Cheah

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A stay in ICU can be traumatic to patients. Not only are patients confronted with the possibility of death but also constantly drift in and out of consciousness, hear mysterious alarms ringing and see different sets of faces each time they are awake. The journey of recovery from critical illness does not end on the day of ICU discharge but this experience and memory will cling to patients as they move on. Patients find it difficult to make sense of the sequence of events due to 'memory lost' from sedation or critical illness. It is often because of lost or scattered memory and incomprehensible sensory inputs that trigger a spectrum of psychiatric disorders after an ICU stay. "I have no memories for myself. I didn't even realise I had been in a hospital. My family has been telling me. That time, for me it did not exist". Quoted by one ICU survivor.¹

Psychiatric disorders such as memory problems, post-traumatic stress disorder (PTSD), depression, nightmares, and anxiety are common issues that plague ICU survivors. Because ICU survivors frequently experience several long-term debilitating psychological impairments affecting their quality of life, there is a trend toward increasing follow-up post ICU admission, psychiatric review, and psychosocial counselling in post-ICU clinics. One of the projects currently in practice to help patients better understand what had occurred during their ICU stay is by writing a diary for them - The ICU diary. (Photo 1)

The ICU diary, like an ordinary diary, is written by ICU staff, family, and friends

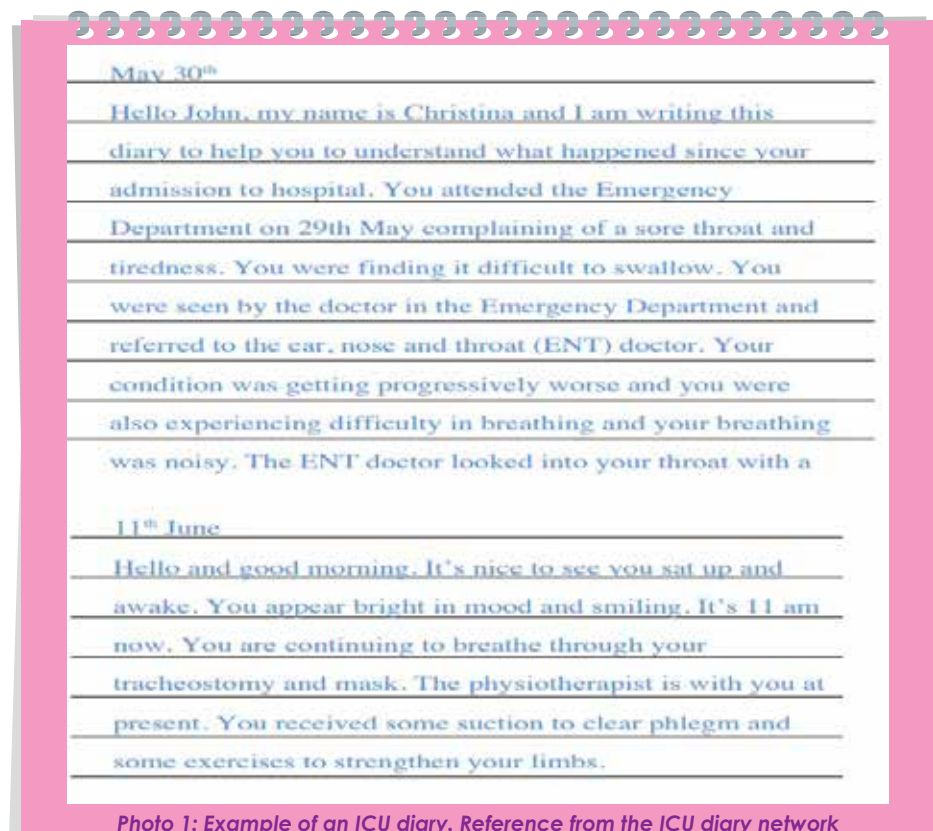


Photo 1: Example of an ICU diary. Reference from the ICU diary network

during sedation and ventilation. The diary serves as a shared tool to write down 'the day' on behalf of the patients during critical periods. During the recovery phase, when the patient is well enough, he would have the opportunity to read and appreciate what was written in the diary. The content written by ICU staff or family is to fill in the patient's memory loss gap. This allows patients to understand what had happened to them and to make sense of the chain of events during ICU admission. It also helps to rationalise the nightmares they are experiencing and helps them cope with psychiatric disorders such as PTSD or depression. The content of an ICU diary is not necessarily lengthy or written in jargon. On the

contrary, it should be written in simple language which patients can easily understand. The content is patient-centred and not only limited to events in the ICU. It can include any event related to the patient, such as the match score of his favourite football team, updates on family members, grandchildren's graduation, photography, etc.

During an ICU admission, the ICU nurse in charge is responsible for patient selection and screening to initiate the ICU project. The nurses also educate the family and will frequently update the diary's content. Although they are the main person in charge of the ICU diary project, the responsibility should be

shared among the ICU staff taking care of the patients (doctor, dietician, speech therapist, physiotherapist, others.) and everyone is encouraged to contribute to the ICU diary.

There is convincing evidence that highlights the impact of the ICU diary on the psychological well-being among survivors.²⁻⁹ However, because the sample sizes were small in most studies, there is a need to design a larger trial. The ICU diary was associated with a lower risk of depression and better quality of life during recovery.³ Most reports showed an improvement in psychological assessment scores following the ICU diary.⁴ Most patients gave positive feedback, such as understanding what they had survived during critical illness, having a better understanding of recovery, and gaining coherence of nightmares and delusional memories. Patients also reported on the component that played a crucial role in their diary such as the presence of photographs or going through the diary with the staff.⁵ Feedback from patients concluded that the ICU diary was helpful in making sense of the ICU stay and kept them occupied during difficult times; this resonates with the Facilitated Sense Making theory.⁶ Pooled results from a meta-analysis showed that patients who received an ICU diary also reported lower risks of psychiatric disorders (PTSD, depression, anxiety) and a better quality of life.⁷

Family members are encouraged to contribute to the diary. This helps to foster bonds between ICU staff, patients, and their families. It provides an essential source of information and a way for families to register their presence at the patient's bedside and express their feelings. The ICU diary plays a different role for the bereaved family of patients who did not survive the ICU.⁸ It provides support to family members during the bereavement process and this diary

helps them to understand how ill their loved one was and assists to convey the care their loved ones received from ICU staff. It also provides comfort and support and enables the coping of their loss during the difficult periods.

Current research on the ICU diary extends beyond adults into paediatric patients. The ICU diary in the Paediatric Intensive Care Unit is a beneficial tool of communication and helps in the formation of a mutual understanding between family and health care workers.⁹ It also serves as a space of written accounts for parents to express their emotions and provides insight into caregivers' struggles and challenges.

The ICU diary project was met with challenges such as bureaucracy, ethical issues, and increasing the already high workload among ICU staff. Families must be aware of the indication of starting the ICU diary and the need for photography as part of its process. The ICU diary must be handled cautiously to avoid patient privacy and confidentiality breaches. No individual is allowed to take photographs of the content, share or read it aloud in public. The ICU diary must be handled with care and respect. It should be by the patient's bedside at all times and considered hospital property until the patient is discharged from the ICU.

The ICU diary network (<http://www.icu-diary.org/diary/start.html>)¹⁰ is a website that provides a platform for information, literature, guidelines, and references for anyone interested in starting the ICU diary project. It was founded by a group of dedicated nurses with enormous experience in this field and aimed to connect people from different regions by sharing the same interest. Looking at the map distribution of ICUs with the ICU diary project (<http://www.icu-diary.org/diary/map.html>), the centre has successfully transformed this ideology into a full-run project mainly in Europe,

Scandinavia, and the USA with fewer centres in South America, Australia, and New Zealand. In Asia, only one centre from each India (*implemented diary*) and Indonesia (*ongoing diary project*) have such projects in place. For a more meaningful interpretation of research, we need participation from all regions with diverse patient demography to study the impact/outcome.

The ICU diary might not be the sole intervention that brings a difference to ICU survivors. Still, it is definitely valuable for providing a cushion of support, to ease the path of recovery for patients and families. Maybe we should start asking ourselves, "Can any of our current patients benefit from an ICU diary?" It's never too late to start.

Disclaimer: The author is not a member of the ICU network and has no conflict of interest in this publication.

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Moving Forward with ICU Rehabilitation

by Dr Nor Fadhilah Shahril

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I was given the opportunity by our Head of the Intensive Care Unit (ICU) at University Malaya Medical Centre (UMMC), Professor Dr Nor'azim bin Yunos, to organise the ICU Rehab week this year. Since COVID-19 first hit Malaysia in 2020, we have ceased all physical events. Fortunately, thanks to the increased vaccination rates in our country, we have moved towards an endemic state, and restrictions have eased significantly.

The ICU Rehab week 2022 was done in collaboration with the Department of Rehabilitation Medicine. The organising team was led by me and Dr Pek Eu Way, our very own ICU Rehab Specialist in UMMC. The team consisted of fellow consultants, specialists, medical officers, house officers and allied health members who are our nurses, physiotherapists, occupational therapists and speech therapists. As you can see, there are multiple stakeholders involved and, no doubt, these stakeholders are also required in the implementation of early rehabilitation in the ICU. The chosen theme for the awareness programme was "Move It!" which was in keeping with the concept of early rehabilitation in the ICU. The programme was held on 19th and 20th July 2022. The aim was to create awareness among the healthcare staff as well as to the public on the importance of initiating early rehabilitation among critically ill patients in ICU to minimise the risks of developing Post Intensive Care Syndrome (PICS); and to provide a better patient-centred outcome and reduce the length of hospital and ICU stay. The ICU Rehab Week was officiated by Professor Dr Nazirah binti Hasnan, the University Malaya Medical Centre Director, who is

also a consultant rehabilitation physician herself.

Critical illness leads to impairment in physiological, physical, and mental function. This has a profound effect on patients' recovery. Therefore, rehabilitation should be incorporated into patient care early in the recovery process whilst the patients are in the ICU. PICS is a constellation of symptoms and signs that are due to impairment in physical, emotional, and mental wellbeing¹ and it is not well recognised in Malaysia which is why the incidence is not well known. The awareness of this condition has increased following the coronavirus disease 2019 as the COVID survivors often suffered from the effects of "Long Covid".

Early rehabilitation in ICU could reduce the progression to PICS. This does not only involve physical rehabilitation but also mental and cognitive rehabilitation with the help of our fellow physiotherapists and occupational therapists. Our roles as anaesthetists and intensivists in caring for these patients are also important. Implementing the ABCDEF bundle in our day-to-day management can potentially improve patients' recovery and reduce the risk of developing PICS.²⁻⁶ ABCDEF bundle consists of "Airway and Breathing Coordination",⁷ "Delirium monitoring and management",⁸⁻⁹ "Early ambulation"¹⁰⁻¹² as well as "Family empowerment and engagement". When performing our daily rounds, we should encourage sedation interruption in haemodynamically stable patients to encourage participation in early rehabilitation, allow ventilatory weaning, and assess suitability for extubation. Light sedation practices can

also help reduce delirium risk by reducing the prolonged infusion of drugs such as midazolam. Early ambulation practices can delay the progression to ICU-acquired weakness, which is a significant component of the PICS. With the help of physiotherapists and ambulatory devices required for ambulation, early passive or active ambulation can be instituted daily. Lastly, we as clinicians should engage the family members to be actively involved in the patient's care, especially during the rehabilitation process in ICU by reorientating and motivating their loved ones as they recover from critical illness.

With this in mind, our ICU Rehab Week included several awareness activities which consisted of Booth Visits, a Live Forum with patients, a Live Webinar session on ICU Rehabilitation at Breakfast@UMHealth, simulation training as well as continuous nursing and medical education. We were very fortunate to have six industrial companies providing financial assistance and educational support by being part of the awareness booths to display their rehabilitation devices and products related to rehabilitation, including nutritional support. Without the help from Professor Dr Shahnaz, we would not be able to receive tremendous support from these companies. The industrial companies involved were Pharm-D Sdn Bhd, Mediklink, Vitamedik, Nestle, Fresenius Kabi and IDS Med.

The event's highlight was the Live Forum with patients hosted by Dr Yap Mei Hoon. We were honoured to have two of our COVID-19 survivors, Encik Mohamed Azlan bin Ghazali and Encik

Mohamed Faizal bin Karim Din, shared their experiences on how they fought the disease and their recovery journey whilst in the ICU. Their stories were inspiring and engaging and brought tears to our eyes as we remembered remarkably what they went through when they were very ill. The Live Webinar session at Breakfast@UMHealth was also an eye-opener. We had over 200 attendees listening virtually to our guest speaker, Dr Shivani Rajasegaran, a rehabilitation medicine physician from Hospital Ipoh, who talked about the essence of ICU Rehabilitation. She also shared some new insights gained in the United Kingdom during her training programme and the system of ICU Rehabilitation in Hospital Ipoh. Our second guest speaker was Dr Pek Eu Way who spoke to us about addressing and monitoring ICU delirium and pharmacological and non-pharmacological methods commonly used in the ICU.

There are multiple barriers to rehabilitation in critically ill patients. The inadequate multidisciplinary staffing was essentially the main barrier to rehabilitation at UMMC. We often face weekend dips in our rehabilitation services due to a lack of human resources. There is also a lack of knowledge regarding the benefits of early rehabilitation in the ICU. This has led us to organise the ICU Rehab Week to raise awareness amongst the healthcare staff. The Intensive Care Unit of UMMC hopes that with continuous support from the department and hospital, we will be able to evaluate and implement early ICU rehabilitation to improve our healthcare services with a more focused and patient-centred approach. Lastly, on behalf of the ICU team, I would like to extend my heartfelt gratitude and appreciation to the team members involved in making this awareness programme a success.

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Minimally Invasive, Maximal Headache? Challenges for the Cardiac Anaesthetist

by Dr Farah Nadia Razali

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Introduction

Despite the technical aspects of cardiac surgery for coronary and valvular lesions having been perfected over the past decades, with proven reliability and successful outcomes, it is the "median sternotomy" access that continues to make it an invasive, painful and traumatic experience. In the mid-1990s, for the first time, minimally invasive mitral valve surgery was performed using a parasternal and hemi-sternotomy access and the rest, as they say, is history.

With the promise of "less surgical trauma, less scarring, minimal pain, shorter hospital stay" patients demand for Minimally Invasive Cardiac Surgery (MICS) and its popularity continue to rise. However, the challenge remains for us to balance out patient safety and provide optimal surgical conditions for the surgeons.

They say smooth seas never made a skilful sailor. Most anaesthetists would gladly welcome a challenge and, in my personal opinion as a junior aspiring cardiothoracic anaesthetist, MICS is

designed to keep an anaesthetist on his or her toes at all times.

The Good and the Bad

Aside from the attractive cosmetic benefits that appeal especially to younger patients, MICS also offers the benefits of reduced incidence of postoperative pulmonary complications, chronic pain, deep sternal wound infections and atrial fibrillation. But prolonged cardiopulmonary bypass (CPB) times and the use of peripheral cannulation are their downsides. Longer bypass time exposes the patient to all the complications that come with it, particularly neurological complications when combined with descending aorta reversal flow during peripheral CPB. Other unfavourable outcomes include aortic injury, phrenic nerve damage and unexpected conversion to midline sternotomy.

Principles

Most MICS use a thoracotomy approach, either a left or right-sided incision. The majority of the patients will be in the supine position with the side of

interest slightly elevated with the ipsilateral upper limb extended to the side. Lung isolation for one-lung ventilation (OLV) is not mandatory but it is preferred and it is the technique we use in our centre.

The use of transesophageal echo (TEE) is essential to not only view the surgical lesion, but to aid in the insertion of peripheral cannulas. Should bicaval venous drainage be needed, we also assist the surgeon in either inserting a large bore angiocath into the right internal jugular vein (IJV) or insertion of the superior vena cava (SVC) cannula itself, in a sterile manner.

There are two approaches to aortic cross-clamping, either via an endoballoon or under direct vision using a device such as the Chitwood clamp. In our centre, the direct vision method is used.

The subsequent management and weaning off from CPB are similar to an open sternotomy surgery and at the end of the surgery, we exchange the double lumen endotracheal tube (DLT) to a

single lumen tube (SLT) before transferring to CICU for postoperative care. As always, constant clear communication between the anaesthetist, surgeon and perfusionist is key to a favourable outcome.

Good Pre-Anaesthetic Assessment is Key

A thorough anaesthetic assessment not only focuses on the cardiac lesion of interest and its systemic sequelae but also other existing conditions that may preclude the vital components of MICS like contraindications to usage of TEE or for femoral cannulation. Airway assessment is important to decide the best modality for lung isolation. The presence of restrictive lung disease or pulmonary hypertension may preclude the patient from OLV. Other signs that are important to look for would be chest wall deformities or obesity that may complicate surgical access as well as pose extra challenges to the anaesthetist.

Challenges for the Anaesthetist One Lung Ventilation (OLV) in the Supine Position

Depending on the patient's airway, we either use a DLT or a bronchial blocker for lung isolation. OLV together with the relatively supine position of the patient, as we know, is not a good combination as perfusion is equally distributed to both lungs including the collapsed lung worsening the V/Q mismatch and thus the incidence of hypoxemia in this position is greater than if the patient would be in the lateral position. In our experience, we find that is more profound after weaning of CPB where after a period of ventilating both lungs, we go back to OLV for hemostasis. Oxygen desaturation is expected, and occasional resumption of both lung ventilation may be needed. Therefore, communication with the surgeon is of key importance.



Positioning

As mentioned earlier, the majority of MICS cases take place with the patient in the supine position with the side of the incision slightly elevated with a wedge and the ipsilateral upper limb slightly extended out for better surgical access. Care must be taken during positioning to avoid excessive traction on the brachial plexus and padding of all pressure points are essential and the head and neck must remain in the neutral position. We also ensure no intravenous or intraarterial cannulas are sited on the brachial portion of the ipsilateral arm as the position may cause kinking of the lines and difficulty accessing them.

Monitoring

Aside from the standard monitoring for cardiac surgery we also routinely use cerebral oximetry and processed EEG monitoring to monitor brain perfusion. External defibrillator pads are used for all minimally invasive cardiac surgeries and careful positioning of the pads is important to ensure good contact yet not impair surgical access. Throughout surgery, good contact of the defibrillator pads and continuous ECG tracing are also essential and may take adjustment of the ECG leads from time to time.

The risk for neurological events is significant, especially for minimally invasive cardiac surgery owing to the use of peripheral CPB. During peripheral

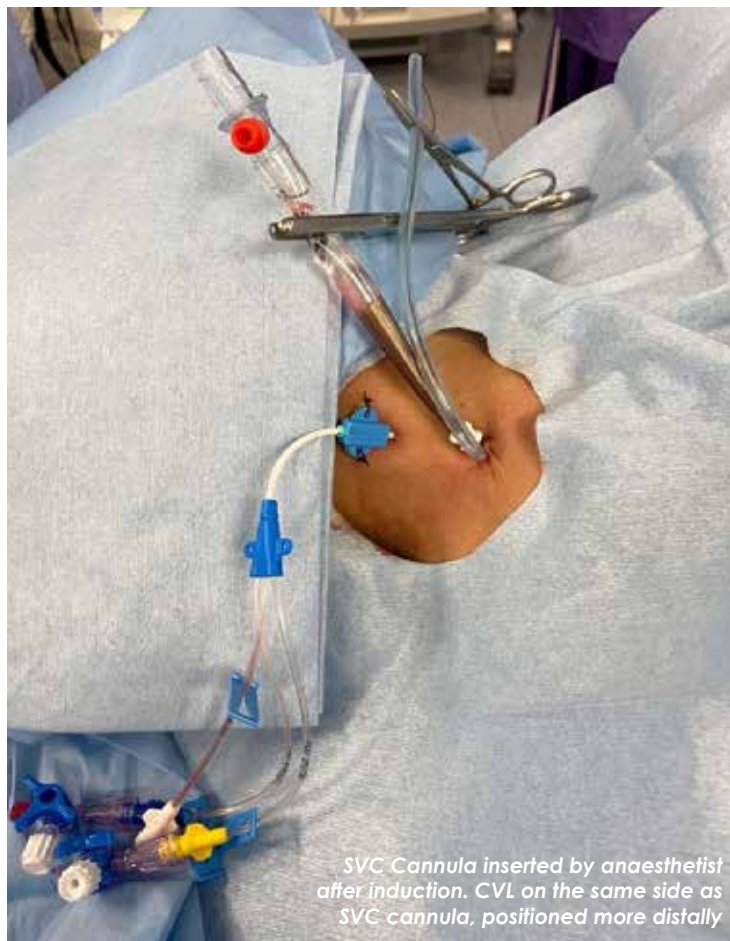
CPB, oxygenated blood flow to the brain and upper body tissues occur in a retrograde fashion. If during the period of no ventilation, the heart is still ejecting, the mixture of oxygenated and deoxygenated blood in the proximal aorta will compromise cerebral perfusion, especially to the right hemisphere, which can cause significant morbidity. This is known as **Harlequin Syndrome**. Cerebral oximetry monitoring is particularly helpful and an abrupt fall in the readings can help recognize this condition immediately. Prevention includes ventilating the contralateral lung with an FiO₂ of 1.0 after initiation of CPB until diastolic cardiac arrest.

Vascular Access

If a bicaval cannulation is needed, we sometimes assist the surgeon by either cannulating the SVC or inserting a large bore angiocath (usually a 16G) into the right IJV, with which the surgeons can use to insert the SVC cannula themselves via the Seldinger technique.

Insertion of the SVC cannula by the anaesthetist has its benefits as it is ultrasound-guided, making complications less likely. Standing at the head side of the patient during cannulation is also more ergonomic for the one inserting the line. However, expertise and experience are needed and not many anaesthetists are comfortable with inserting the SVC cannula.

The insertion of an SVC cannula is done under aseptic technique after induction via ultrasound guidance. The administration of intravenous Heparin 5000 units during insertion of the cannula prevents thrombus formation. The cannula is carefully secured with sutures and wrapped with sterile drapes prior to the start of surgery. Correct placement is confirmed with the usage of TEE.



The placement of femoral cannulas may cause significant blood loss especially when cannulation is difficult or inadvertent dislodgment happens. Blood products should always be ready in OT prior to the start of MICS.

If aortic cross-clamp is done by an endoballoon, it is useful to site the arterial line at the right radial as a reduction in pressure reading at this site may signify that the endoballoon has migrated distally, occluding the innominate artery. This can also show as a sudden reduction in the right cerebral oximetry reading.

TEE

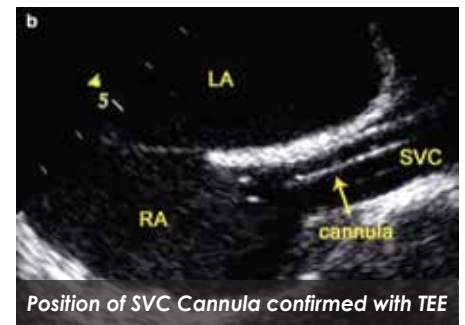
TEE familiarity and expertise are useful for MICS. TEE views are needed to confirm the placement of SVC cannulation, to guide femoral cannulation, to assess the severity of preoperative valvular lesion as well as assessing postoperative valve function. It is also useful for assessing

ventricular function, volume status as well as other cardiac pathologies that may be missed on transthoracic echo (TTE).

Post Operative Airway

Typically, at the end of the surgery, we exchange the DLT to a single lumen ETT for post op ventilation in CICU. In the rare occasions that a re-exploration surgery is needed, it is usually done by a different anaesthetist from the one handling the case. This poses a problem especially with airway trauma, oedema or difficulty inserting a DLT or bronchial blocker.

Although not available widely in our centre yet, a silicone DLT is softer and better tolerated by patients. This is useful for post-op ventilation and our CICU nurses are familiar with handling the silicone DLT. It is especially beneficial should the patient need to head back to OT as no airway manipulation will be



needed and reinstitution of OLV would be prompt.

Conclusion

Minimally invasive cardiac surgery, whether for coronary revascularization or valvular repair, is fast being front and centre in the cardiothoracic surgery arena. Anaesthetic methods and techniques are always evolving to meet the needs of the surgical procedure as well as ensure safety for the patient. Continuous training, comprehensive preparation and constant clear communication with surgeons and perfusionist is key to ensuring a successful outcome.

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Money Never Sleeps Series Episode 2

DIVIDEND INVESTING IN STOCK MARKET



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The Mechanics of Dividends

"Dividends may not be the only path for an individual investor's success, but if there's a better one, I have yet to find it" said Josh Peters in his book *The Ultimate Dividend Playbook*, one of the few rare books on investing focusing solely on dividend investing as a single strategy for an investor. When a business / company conducts its business, the profits gained can be used to either reinvest back into the company to expand the business or return some amount of it to the shareholders, thus dividend is the cash payment from the company's earnings to its shareholders, usually to reward the shareholders for their faith in the company.¹

Dividends can come from your investment in a company whether it is listed on the stock market or not. If you invested your money in your friend's company which is not on the stock market, it is commonly known as a "Private Company", while those in the stock markets are called "Public Companies". The Board of Directors of both types of companies can decide to give dividends if they think it is in the best interest of the companies.

In a widely popular investment book by Robert Hagstrom, "*The Warren Buffet Way*",² the world-famous prolific long-term investor Warren Buffet loves to invest in companies giving consistent and increasing dividends. However, he also took caution in ensuring those companies he invested in only deliver the dividends with a clear dividend policy and only if the manager is excellent in the sense that reinvestment

back into the company will produce inferior returns. However, Warren Buffet's own investment holding company Berkshire Hathaway had never paid any dividends in the past five decades since it was established because Warren Buffet believes in his own ability to consistently acquire new companies and partial investment in wonderful companies to deliver superior returns to its shareholders.

Thus, do not be surprised once you venture into the realm of the stock market, that most public companies will not give dividends. Excluding those who are not making a profit, successful companies that are growing and rapidly expanding would prefer to reinvest all their profits into their own business such as building new factories or buying new plots of land to expand their business activity, thereby retaining their profits. When examining a public company's balance sheet in its account statement, this is classified as "retained earnings" which simply means profit which was left in the company to pay taxes and distribute dividends.

Dividend Investing in Bursa Malaysia

When you press buy on any company listed in Malaysia Stock Market (Bursa Malaysia), in a split millisecond, a transaction of your money in exchange with a contract note indicating your ownership in the company will occur. The transaction happened instantaneously but the flow of money will be completed within two days due to the electronic financial structure in place in Malaysia, which is beyond the

scope of this article. Owning "shares" or "stocks" of a company out of the total amount shares (usually in the region of several million to billions of shares) correspond to the percentage ownership of the company. For example, if you own 10,000 shares of a company whose total number of shares is 100 million shares, it will correspond to owning 0.01% of the company.

Amounts of dividends decided to be distributed by the company usually will be in monetary value in amount. Good companies always have a dividend policy in place to guide the distribution of profit. The term *Dividend Pay-out Ratio* (DPR) means the percentage of profit set aside by the company annually to be distributed to shareholders.³ After dividends have been paid out, the rest of the profits will either be kept in the company's fixed deposit, reinvested in themselves to expand the company, or used to acquire another company. For example, company ABC has a DPR of 30% and a profit of RM 10 million, hence the company will distribute RM 3 million as dividends to their shareholders.

This amount of dividend by company ABC of RM 3 million will then be divided by 100 million shares making the *Dividend Per Share* 3 sen per share. An individual investor who had invested 10,000 shares of this company, will receive 3 sen multiplied by 10,000 which equals RM 300. Bursa Malaysia uses the *eDividend* system, by which all dividends distributed by the company will be electronically transferred directly to the savings account of the individual

investor which was initially linked to the trading account during account opening.⁴

The Magic of Dividend Investing

Taking the example above, we can calculate the percentage of dividends if we know how much money was invested to purchase the 10,000 shares. Let's say RM6,000 was spent to purchase those shares, thus, calculating the

dividend received divided by the amount of money spent, will put the dividend rate at 5% in relation to the initial amount of money invested in the beginning.

The magic of it will come at the growth of the dividend received year after year following the incremental nature of a company with growing business activities. Let's go back to the example

of company ABC which had a DPR of 30%. Every year the company seem to have a consistent increase in the company's profit, with Year 2 showing RM12 million profit, and Year 3 with RM14 million profit and subsequently every year until the 8th year with RM24 million profit. Hypothetically with increasing amount of profit at the same DPR of 30% annually, the dividend rate will also increase at the same time.

| Year | Year 1 | Year-2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
| Profit (mil) | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| Dividend (mil) | 3 | 3.6 | 4.2 | 4.8 | 5.4 | 6.0 | 6.6 | 7.2 |
| DPS (sen) | 3 | 3.6 | 4.2 | 4.8 | 5.4 | 6.0 | 6.6 | 7.2 |
| Dividend | RM300 | RM360 | RM420 | RM480 | RM540 | RM600 | RM660 | RM720 |
| Dividend (divided / initial investment) | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% |

The total amount of dividend received over 8 years was RM 4,080 on the initial investment of RM 6,000 made in the beginning thus calculating a return on investment (ROI) of 68%. Is this the magic of dividend investing? This is just the beginning. There is no other financial instrument other than the stock market which can provide such an opportunity. The calculation above considers only a modest increment over the years by a mere 20% profit increase annually and a diminishing percentage return over the years. Imagine if a company consistently produced exponential growth of profit with such a stellar business improvement? Sometimes dividend ROI could be up to 300-400% over the course of 8 to 10 years.

With such a good performing company delivering consistent returns over the years, it will surely elevate the company standing and reputation and creates an increase in demand over the company shares in the stock market throughout the course of this eight years journey of

investing. With such performance, it will be highly likely that the share price will also increase tremendously at the same time and be highly valued by the stock market participant. In addition to a real return via dividend of 68% over eight years, shareholders of company ABC also will benefit from a significant increase of "unrealized" profit due to an increase in share price. Usually, performance like this will at least cause the share price to increase between 200-300%. "Unrealized" profit from the increase in share price will remain unrealized until the share is sold to unlock the gain via the share price increase. Once shares have been sold, there will be no more future dividends to be gained.

Real Case Study of Dividend Investing in Bursa Malaysia

Reading the previous section of this article will make you wonder if such a company will ever exist. Is it just a figment of my imagination as the writer of this article? Let's look at the story of a

little-known company called *Uchi Technologies*, stock code *UCHITEC* in Bursa Malaysia. *Uchi Technologies* developed a niche and specialized precision electronic control module for many electrical and electronic products used widely in households and offices around the world. What makes it more related to us Anaesthesiologists is the fact *Uchitec* is the world's largest producer of electronic control modules for automatic coffee and espresso machine for both generic and high-end brands.⁵ Afterall, Anaesthesiologists are closely associated with the habit of drinking coffee, as has been shown in a study among Scandinavian anaesthesiologists showing 91% of them drank coffee.⁶

Let's take the example of *Uchitec*: we bought it in 2012, at RM1.00 per share using our money of RM10,000 saved up from the daily work of an Anaesthesiologist to get hold of 10,000 shares at that time.



| Year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-----------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| DPS(cent) | 10 | 5 | 16 | 13 | 25 | 14 | 16 | 17 | 20 |
| Div % | 10% | 5% | 16% | 13% | 25% | 14% | 16% | 17% | 20% |
| Div | RM1000 | RM500 | RM1600 | RM1300 | RM2500 | RM1400 | RM1600 | RM1700 | RM2000 |

source: bursamalaysia.com

Let's calculate all the dividends collected since 2013. A total of RM 13,600 dividends were received on the initial investment of RM 10,000 making an ROI of 136% just from dividends alone. Share prices have increased 330% from RM 1.00 to RM 3.30 over 10 years, creating what is known as the "Total Shareholder Return" (TSR) of 466%. This is without reinvesting annual dividends back into the company again using the strategy of the "Dividend Re-investment" strategy.

Eighth Wonder of the World

Imagine if the annual dividend is reinvested in 2013, and subsequently, every year dividend is reinvested back into purchasing more *Uchitec* shares.

The compounding growth of dividend income and TSR will increase exponentially rather than linearly as described above. The greatest scientist in recent history Albert Einstein also emphasized the magic of compound interest and patience in being invested to reap the benefits of compounding "interest". As the saying goes, "Compound interest is the 8th wonder of the world. He who understands it, earns it; he who doesn't, pays it".⁷

There are many past case studies of companies delivering superior absurdly high returns over the years with dividends. In the past decade or so, some popular company delivering great returns of dividend investing if you

have invested in them includes, NESTLE, DLADY (Dutch Lady), PADINI, HUPSENG (yes, the biscuit), PBBANK (Public Bank), MAYBANK, SCICOM, HEIM (Heineken) and CARLSBRG (Carlsberg).

Globally, companies with extremely high legendary returns via dividends are called "Dividend Aristocrat". The criteria required to be labelled as such is the company had given dividends yearly increment of dividends year after year for 25 years straight. The most popular example is the largest non-alcoholic beverage producer in the world, Coca Cola which have been paying dividends in increasing amount since 60 years ago. According to this calculator provided by Coca Cola themselves,⁸ if

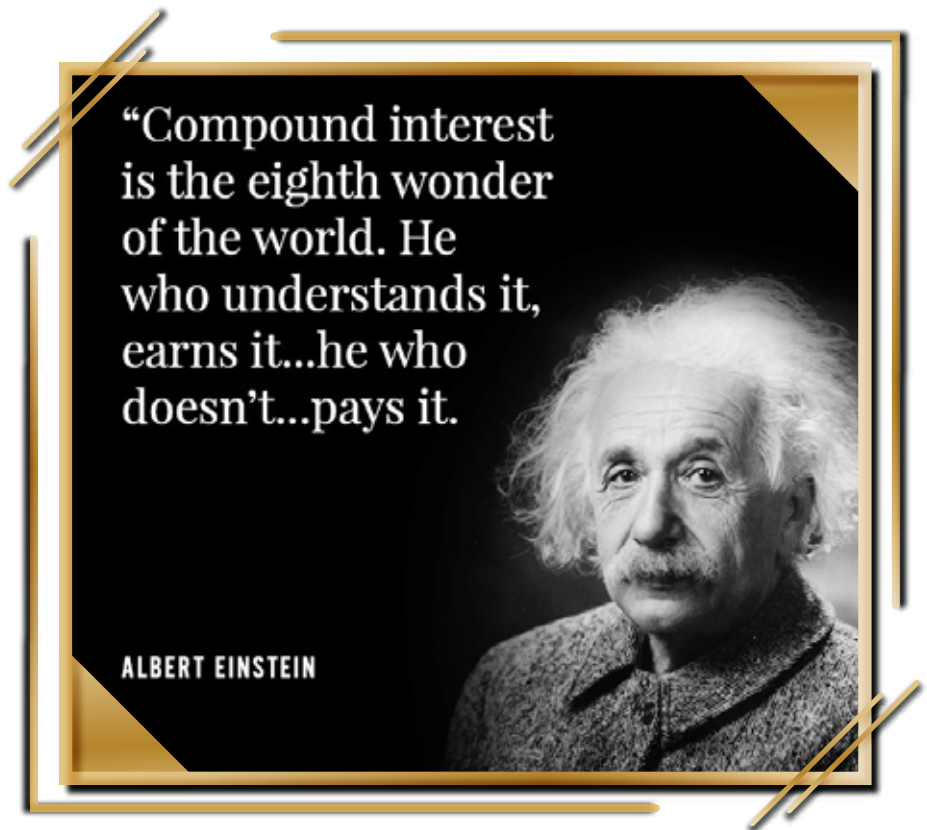
you had invested in Coca-Cola of 1,000 shares 30 years ago, your current investment would reach a return of 1700% and your current holding would have increased from 24,000 dollars to almost half a million dollars (3200% returns and 700,000 dollars if using compounding strategy).

Conclusion: Hindsight is Always 20/20

Discussing the theory of investing and returns is easiest when we look at the past. As the saying goes, hindsight is always 20/20 indicating if we look at history it is easy to say a lot of things and make an accurate conviction of what could have been if we buy this and hold that and reinvest to compound it and so on. I can vouch with my experience being involved in the financial market during medical school about 15 years ago, talking or writing is 30 times easier than actually doing it. As I have told many of my students that had informally learnt from me in the past - when we invest, we are not buying the past, we are buying the future of the company. Can we rely on past data to predict the future? Yes, we can, but up to what extent?

As any ethical and responsible stock market remisier, financial planner, financial regulator, seasoned trader, and investor will always say, *"Past performance is not an indicator of future results"*. Many sources have profoundly shown that the stock market offers a consistent superior return in dividend investing but with a high degree of risks involved in it. The highest risk is not having a fundamental knowledge of the stock market, dividends, and the mechanics of it, which I hope the risks have been lessened by this article.

The second highest risk in dividend investing in the stock market is choosing the wrong company to invest in to reap the benefit of dividend investing, as this



involves a very long span of time. So how do we choose a wonderful company that has high probability to deliver superior returns on investment while at the same time we as anaesthesiologists do not have to worry

about our investment and have a good sleep at night? For that, let's wait for the next episode in this **Money Never Sleeps Series Episode 3: Conservative Investors Sleeps Well.**

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TRAIL RUNNING

- Tips from an Avid Trail Runner

by Dr Aizat Mohd Aziz

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Introduction

I never quite understood what my patients meant when they said they felt like there was a boulder, like lead, on their chest or their legs. Sure, I get it theoretically but having just passed the 26km mark on the race trail, I fully comprehend what they meant mentally and, most excruciatingly, physically.



The run took me through steep ridges and river valleys around the base of Mt Kinabalu. It was my lucky day as its seven peaks were visible, and framed by the sun. The word regal came to mind. However, the sublime splendour of my surroundings did little to alleviate my

ebbing vitals on this 30km trail run. I mightily trudged along, gruelling as it was, and I spied the outline of the (in)famous Bukit Dallas. It is one of nature's finer handiwork although its beauty is deceptive; this is where I have to complete a steep double ascent with a total course elevation gain of 2075 meters. If that number does not conjuring dread, let me put it into context: the KL tower is 421 meters, and I was looking at five times of that for this race through the mountain.

My proverbial 12 trials of Hercules ended with me completing the race a wee bit shy of 7 hours, for which I was awarded a pewter medal with a hint of the colour of the metal it was supposed to represent (gold/silver/bronze?). I also got a t-shirt and a side of elevated serotonin for completing my first trail run. And dare I say, some bragging rights? My name is Aizat; I am an avid trail runner with five completed 30km trail runs under my belt. I aspire to complete a 100km ultra one day, and below I would like to share some tips on how to ease yourself into trail running.

Trail Running Scene in Malaysia

Running has seen quite a surge in popularity as the choice of exercise for people in Malaysia. Nationwide, runners





are spoilt for choice with multiple local running events to sign up for, e.g. the Standard Chartered KL Marathon (SCKLM), the Penang Bridge International Marathon and the Borneo Marathon in Kota Kinabalu to name a few. However, for the more adventurous runners, or for the runners who wish to do an ultra-marathon (a running event beyond 42km), trail running ultra-marathon competitions are the go-to events for them.

Luckily, Malaysia supports a strong trail running scene, with established events like the brutal Tailwind Penang ECO challenge, the consistently sold-out Cameron Ultra (CULTRA), the Malaysia Mountain Trail Festival (MMTF) in Taiping, and my first-ever trail event, The Most

Beautiful Thing (TMBT) at Kundasang, Sabah. Most of these trail events offer multiple categories, from 12km and 30km targeting people who want to wet their feet into trail running, to 50km, 100km and even 100mile ultras for the dedicated trail runners. Most trail running events are not "flat"; in fact, most road races in Malaysia have an average total elevation gain of less than 200m for full marathons (42km). The 30km course for TMBT has a total elevation gain of 2075m, that's a 10-fold increase in elevation. But looking at how most of these trail running events are sold out or nearly sold out in the year 2022, one can safely say that more and more runners are not only dipping their toes but are fully submerged into trail running.

What is trail running

So, what is trail running you might ask? According to Wikipedia, trail running is a sports activity which combines running and hiking (where there are steep gradients). Trail running is considered running on any unpaved surface. For example, you could run on a sandy beach trail or a neighbourhood gravel path, and you'd be trail running. It is similar to both mountain and fell running (also known as hill running). Unlike road running and track running, it generally takes place on hiking trails, often in mountainous terrain where there can be much larger ascents and descents. The varying terrains and elevations make trail runs more technical than road runs. If you are a runner and love the outdoors (like me), taking up trail running is a definite no-brainer. Below I will share some tips on starting out in trail running.

Tips on getting into trail running

Step one: *find the right shoes.*

Shoes are the primary gear considerations for trail runners. If you started trail running on a mellow gravel road, you could get by with your road running shoes. But as soon as you encounter roots, rocks and slippery mud, you'll realise the importance of having trail running shoes. Trail running shoes are generally beefier than road shoes and emphasise traction, foot protection and stability. A good analogy that comes to mind is the difference between tires on a mountain bike and a road bike. Within the trail running category, you'll find a range of shoes that are suited for



everything from easy, groomed trails up to highly technical, variable terrain. If you are in doubt about what shoes to purchase, it is always a good idea to drop by your local running store, where they will be able to offer advice and help you find the perfect fit.

Step two: *gear up to run.*

The beauty of trail running is that you don't need a bunch of gear to do it. Going for a quick, short trail run can be as simple as putting on shorts, a t-shirt, lacing up a pair of running shoes and heading out the door. With that said

there are several gear considerations that can make your run more enjoyable and comfortable, especially as you begin taking on higher mileage and more challenging terrains.

Carrying water is a must for all but the shortest runs. Your water-carrying options include hydration packs, hydration vests, handheld water bottles or waist packs with water bottles. If you are going for a shorter run, you'll likely be fine with a handheld water bottle or a small waist pack. You'll be able to carry enough water for the run while also

having room to store your house key, some cash, and an energy bar or gel.

Consider a larger waist pack, a running hydration vest, or a running hydration pack for longer runs. These offer more storage for larger amounts of water, extra clothing, food, first-aid supplies, navigation tools and other items you may need on a half-day or full-day adventure. When choosing a hydration pack, look for a running-specific style with a narrow design that allows you to swing your arms freely.

Another factor to consider on the trails is



food. For runs lasting less than an hour, you may not need to carry more than an energy gel or two, but if you are out for a couple of hours or more you'll want to have a selection of energy food such as bars, gels and chews. Finding what foods sit well in your tummy during a run takes some experimenting. Generally, for shorter, high-intensity runs, you'll want to stick with simple energy foods like gels

or chews. If you run longer distances, such as ultramarathons, you may find that heartier foods like bars, nuts, peanut butter and jelly sandwiches, and other "real" foods sit OK because you are typically moving at a slower pace.

Last but the most essential tip on trail running is to manage your expectations. It is important to recognise that a

trail-running mile is not an apple-to-apple comparison to a road mile. Because of the natural obstacles and elevation changes, your pace will slow down and your typical mileage will feel much more demanding. Let yourself go slower at a comfortable, sustainable pace, even if it means downshifting to hiking when going up slopes or hills. Instead of worrying about pace, I would



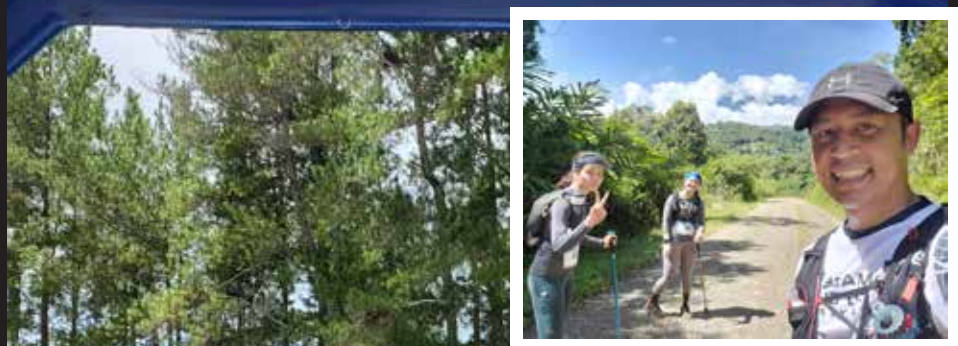
suggest picking a length of time to run instead of mileage - say 45 minutes instead of four miles. It is not easy on the trail, so go easy on yourself first and foremost. Your persistence in trail running will surely pay off.

Modifying a little from F. Scott Fitzgerald, "It's a funny thing coming home after a trail run. Nothing changes. Everything looks the same, feels the same, and even smells the same. You realized what's changed; it's you." Hopefully, my little humble piece of writing will help ease you into trail running. May we meet on the trail someday.



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3. What is Trail Running? - SALOMON (<https://www.salomon.com/en-int/running/trail-running-advice/what-trail-running>)



Nurturing the Apprentice of Anaesthesia and Critical Care Medical Officers in Cluster Hospitals, Pulau Pinang

by Dr Teoh Jui Chang, Dr Nor Hidayah Zainool Abidin

Hospital Seberang Jaya, Pulau Pinang, Malaysia

Introduction

Anaesthesia and Critical Care is a department that manages patients with one-to-one care (apart from vigilant monitoring and prompt intervention during patient care): Some depth of knowledge and advanced skills are required, becoming masters of the airway and learning the arts of resuscitation with various pharmacological agents and ventilatory support, a young medical officer (MO) requires months of intensive training before he can take care of the patient unsupervised.

Currently, a medical officer will have supervised tagging on calls until he can independently be on call in an emergency OR. It takes almost a year before he is being entrusted to do maternal OT on calls. While in ICU, an MO is expected to know proper resuscitation, triaging patient care and ICU admission.

Knowing that it takes months to train a reliable MO, we accept that each MO will eventually choose the path he is interested in. Some are even suddenly inspired to choose a different path. People come and go. Thus, it is not surprising that the Anaesthesia Department, Hospital Seberang Jaya lacks good, qualified anaesthesia trainees. The volume of surgery and critical care patients after the COVID pandemic has increased. Being a district hospital in Penang state, the Anaesthesia Department in Hospital Seberang Jaya is always in a vicious cycle of having an influx of junior MOs,

followed by the loss of senior MOs to the Masters programme, public health or resignations to join the private sector.

Since 2019, our MO's distribution based on seniority has skewed towards the majority of them being juniors. A survey was done at Hospital Seberang Jaya and Hospital Bukit Mertajam in May 2022, and it was found that only a quarter of our medical officers are more than three years in the department (Figure 1). The condition worsened after May 2022 when more than ten MOs left our department for private practice or joined other departments in

the health sector. To further compound the situation, we anticipate further losses at the end of the year, when we will have another 8 to 10 MOs leaving our department for the Masters programme or relocate because of permanent posts offer elsewhere in the MOH. Thus, an initiative to conduct a formal intensive basic anaesthesia teaching was started with the aim to improve, encourage and guide the junior MOs to gain basic anaesthesia knowledge in a very limited duration while, at the same time, continuing to practise daily anaesthesia clinical skills under direct supervision.

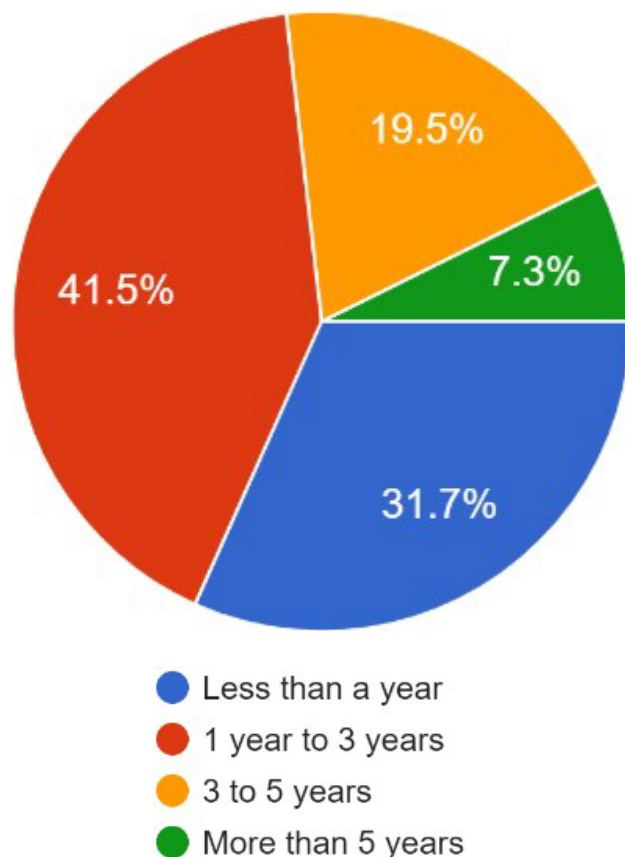


Figure 1: Distributions according to years working as an anaesthesia medical officer

Big Challenges for Junior Medical Officers to Learn Anaesthesia: Limited Time with Low-Cost Direct Learning Experience

We believe the challenges of learning anaesthesia and perioperative care require a high quantity of knowledge with adequate anaesthesia exposure and experiences. Unfortunately, the Anaesthesia speciality is not considered a significant topic in undergraduate medical education; thus, the beginning of life for a junior anaesthesia MO is a big crisis.

Anaesthesia services always deal with crises that require critical solutions

in a concise and timely manner. Implementing simulation practice on a minimal budget and facilities will not be possible in our centre. Training a new anaesthesia junior MO requires close clinical supervision, practical advice, and guidance by the attending anaesthesiologist. It also requires the trainee to understand the basic knowledge, correct his misunderstandings and obtaining the right attitude for self-learning afterwards. We understand that anaesthesia practice involves not only flexible patient care with good experience exposure from daily practice but also requires the person to gain theoretical knowledge and shared experiences

from different tutors. Thus, the programme was conducted with reasonable efforts involving all the anaesthesiologists from the Anaesthesia and Critical Care Department in HSJ, HKB and HBM. To improve the learning experience further, MCQs mixed with SBA questions format were provided on each training day to assess participants' understanding and help clear the myths and mysteries.

Busy Schedule with Continuous Efforts in Learning Basic Anaesthesia Knowledge

In order to ensure no compromise in anaesthetic services, we conducted the workshop one day per week for four weeks.

Below are the workshop contents

| Day 1 / Time 8.8.22 | Topic | Presenter |
|---------------------|---|-------------------|
| 0800 - 0815 | Introduction | Dr Teoh Jui Chang |
| 0815 - 0915 | Department Rules and Regulations | Dr Rusnah |
| 0915 - 1030 | Induction of Anaesthesia and Intraoperative Management | Dr Lee Zhi Shan |
| 1030 - 1045 | Rest | |
| 1045 - 1200 | Central Neuraxial Block Common Pitfalls and Principles | Dr Lee Zhi Shan |
| 1200 - 1300 | ACLS Algorithm Revision and Relearning | Dr Tan Mei Xuan |
| 1245 - 1400 | Rest | |
| 1400 - 1530 | Perioperative Pain Management with the Introduction of Common Analgesics Pharmacology | Dr Ang Chee How |
| 1530 - 1630 | MCQ Test with Q&A | Dr Teoh Jui Chang |

| Day 2 / Time 15.8.22 | Topic | Presenter |
|----------------------|--|-------------------|
| 0815 - 1015 | Basic Common Peripheral Regional Analgesia Introduction and Monitoring Post-Op | Dr Loo Kar Yee |
| 1015 - 1030 | Rest | |
| 1030 - 1130 | Post-Op APS Management and Pitfalls | Dr Lee Fenky |
| 1130 - 1230 | Dealing with Patients (Soft Skills and Consent) | Dr Rusnah |
| 1230 - 1300 | Lunch | |
| 1230 - 1400 | Lunch Talk with Potential Hazards on Recovery from Anaesthesia | Dr Teoh Jui Chang |
| 1400 - 1530 | AEBA Management in ICU | Dr Nor Hidayah |
| 1530 - 1600 | MCQ Test with Q&A | Dr Teoh Jui Chang |

| Day 3 / Time 5.9.22 | Topic | Presenter |
|---------------------|---|---------------------|
| 0815 - 1015 | Massive Blood Loss and the Principle of Resuscitation | Dr Teoh Jui Chang |
| 1015 - 1030 | Rest | |
| 1030 - 1130 | Introduction of Inotropes and Vasopressors | Dr Nor Hidayah |
| 1130 - 1230 | Anaesthesia for Emergency Laparotomy | Dr Dhurgka Ramasamy |
| 1230 - 1400 | Rest | |
| 1400 - 1530 | Anaesthesia for TBI | Dr Tai Seen Yee |
| 1530 - 1600 | MCQ Test with Q&A | Dr Teoh Jui Chang |

| Day 4 / Time 12.9.22 | Topic | Presenter |
|----------------------|---|---------------------|
| 0815-1015 | Anaesthesia for Elderly | Dr Loo Kar Yee |
| 1015-1030 | Rest | |
| 1030-1130 | Anaesthesia for the Elderly Orthopaedic Patient - Hip Fractures and TKR | Dr Teoh Jui Chang |
| 1130-1300 | Anaesthesia Related Emergency Part 1 | Dr Dhurgka Ramasamy |
| 1300-1400 | Rest | |
| 1400-1500 | Anaesthesia Related Emergency Part 2 | Dr Lee Fenky |
| 1500-1545 | MCQ Test with Q&A | Dr Teoh Jui Chang |
| 1545-1600 | Feedback | |

Cost of Learning with Possible Reproducible Teaching Regularly in Future

Given the workshop was conducted voluntary from the efforts of department team members, thus no fee was collected, and participants were encouraged to self-prepare lunch. An e-certificate was provided at the end of the workshop. The venue was the

department CME room. The learning objectives were conveyed to each of the participants and tutors; thus, the learning content was created specifically for the workshop. We believe that this budget-friendly yet high-quality workshop will be reproducible at any time when we have another influx of new MOs.

Feedback from the Participants

Due to our busy schedule and the limited number of anaesthesia MOs, the number of participants dropped from 16 to 13 from the hospital cluster of Seberang Jaya. This is the second workshop that has been conducted since the year 2019 with good responses and feedback from our MOs. Attached below are the feedback we collected from the participants for future improvements;

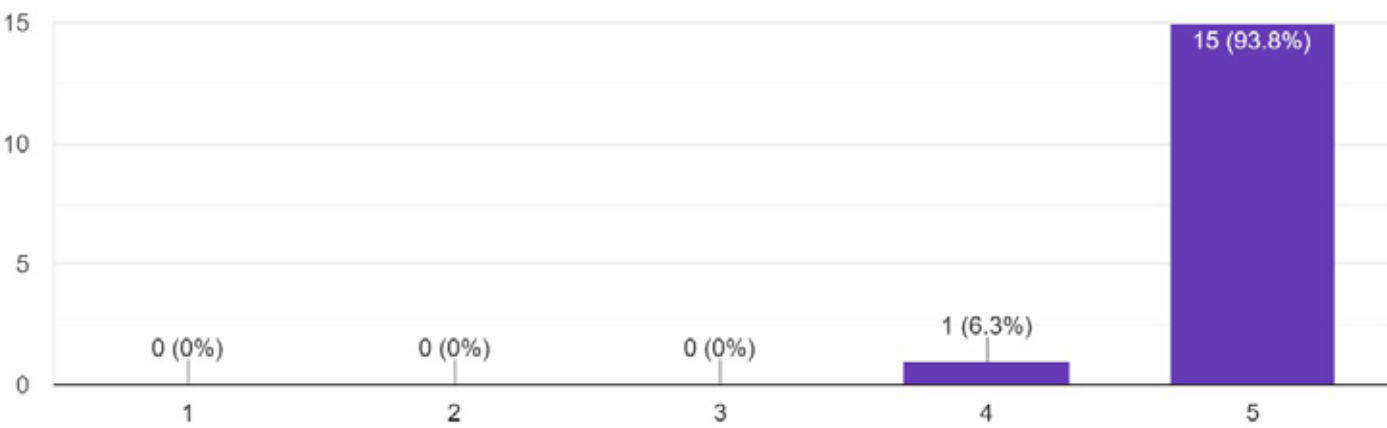


Figure 2: Percentage of participants felt that the workshop should be conducted for all new anaesthesia medical officers (1 - strongly disagree, 5 - strongly agree)

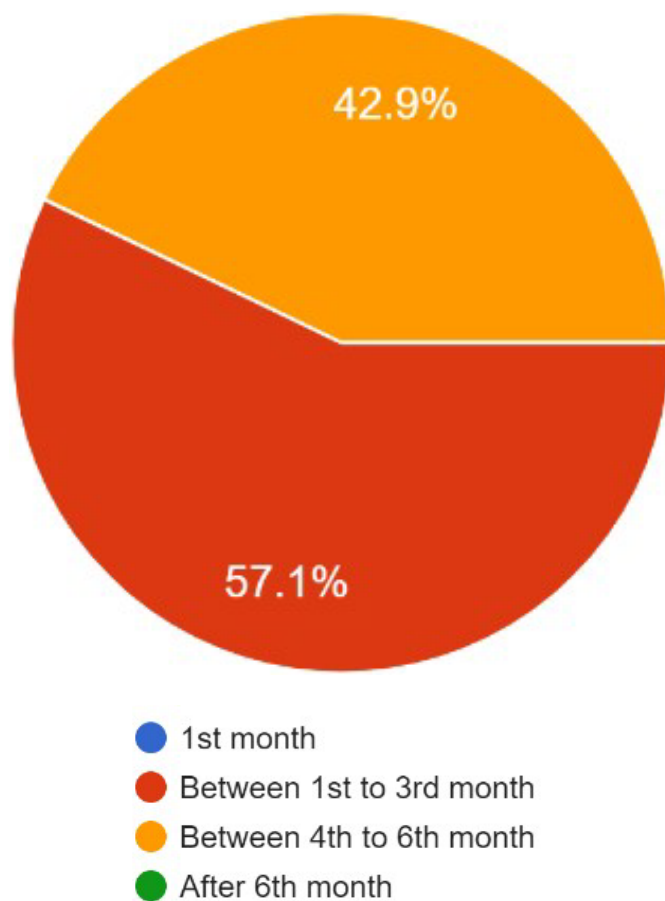


Figure 3: Timing of conducting introductory anaesthesia training workshop after joining the anaesthesia department

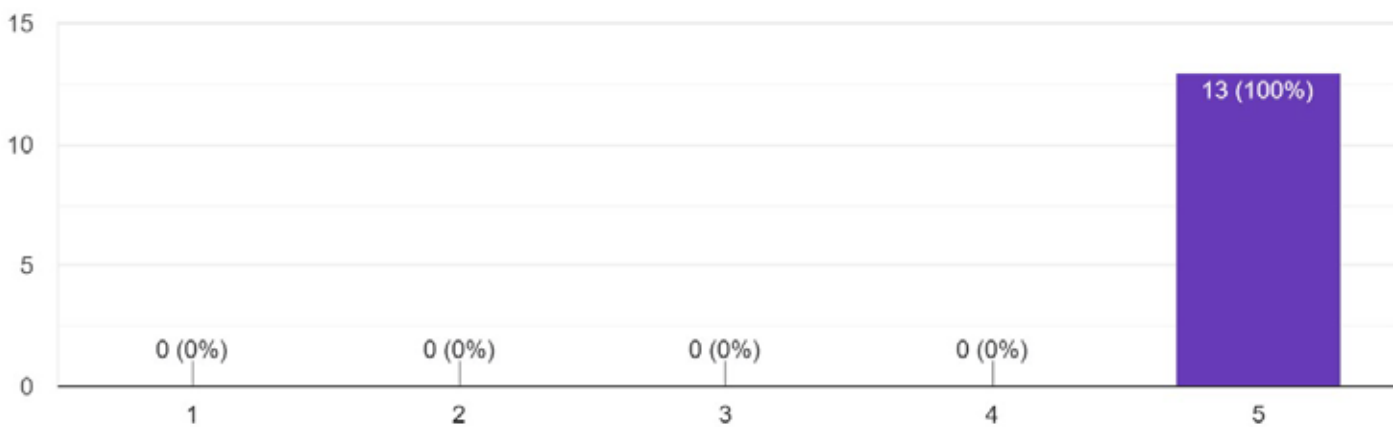


Figure 4: Number of requests for basic intensive care teaching in the department (1 - strongly disagree, 5 - strongly agree)

Since the workshop was conducted mainly for basic anaesthesia teaching, thus a survey was done to assess the number of requests for basic intensive care teaching in the department as in Figure 4.

From the survey, we notice that most of the participants are happy with the arrangements for this workshop. Attached below are the suggestions collected over the past four days for the teaching programme:

Day 1:

There is something i think the course can be improved: sure got something that need to be improved. But as i said, i didn't collect any money and i have no assistant to help me arrange food, so don't comment no food.

15 responses

NA

Case based scenario, common pitfalls in management and common mistakes made by MOs can be highlighted during next session.

May be can add practical session

Hahaha, boss, we got cupcake la
May be can add some hand on, practical sections.

We should treat you to food boss for organizing this.

Maybe can add on more extra clinical scenarios or sharing of some clinical experiences(from bosses or MO), such as rare situations or mistakes that has been done previously and the management for those situations

Everythings good (:

Hands on session

Dr rusnah's session a bit lengthy. Prefer her session in the afternoon

I can help arrange for food.

We should bring speaker for the online meeting because the laptop is not loud enough

Need a mic for Googlemeet. Can't hear clearly.

For the ACLS part - if can go by case scenario, would be more exciting 🤩

There is something that's good in this lectures that i need to give comments: if no, then write NA. If yes, please give some examples to elaborate so that we can keep it in future. If no comments, means not good, then please comment next question

15 responses

NA

The course encourages everyone to revise and participate actively. Despite everyone busy schedule, everyone made their time. Some dilemmas and questions are answered through today session.

Q&A with scenario gave us more insight on what to do during different conditions. The sessions are very interactive, making sure we concentrate and get the informations needed.

The lectures are presented with lots of clinical examples. Simplified and emphasized. Those keywords or new terms can be good guides for us in exploring more and more knowledge. Also, it help us in clarifying the appropriate management and anticipating possible issue/complication. For eg, what are induction drugs/ method used in certain situation (sepsis, low bp, icb, polytrauma, paed).

The elaboration of details that should be known when clerking for premed but couldnt be found in books but explained in simplified versions during the lectures.

Encouraging , pushing us to study and also enlighten us in some topics that we has been confused and emphasize important details of certain topics that we usually dint get to know from books

My specialist are the best sacrificing their time to teach us. Thank you very much.

The lectures were very interactive and had a lot of relevant daily applications which helps clarify uncertainties. Hope to have more of it in the next lectures as well.

Yes, it is good recap for things that i should know

I like it when Dr Lee go through the induction step by step, sharing things normally will be done wrongly

In central neuroaxial block lecture, i like the part where Dr specifically covers things to do to troubleshoot if such and such situation happens. It's a great guidance because personally for me, i still am learning on how to deal/to troubleshoot if a 'crisis' happens, be it a trivial situation or a major ones, in icu or ot settings

I like it to be an interactive discussion. If it's have been a slide presentation would have been slept off.

A good initiative to brighten up the MO on what we are actually doing daily.

Day 2:

What things you think we should improve after 2 days course? There is still has another 2 days course next Month.

14 responses

Remain as is.

I think everything is going on fine so far.

Set a break time and prepare meal (not FOC, to pay by participants beforehand)

Food

None

The course is a little too crammed together.

The courses are very informative and help us a lot.

so far so good

Good

Today's course better than day 1

Time arrangement

I prefer more scenario based teaching like how dr teon did today. Scenario based teaching stimulates us to think.

Everythings perfect

Would like to learn on lungs scan, basic ECHO and IVD scan

Day 3:

Any issues want to feedback for today? If no, please write NA
13 responses

NA

thank you for the initiative. a great teacher you are, we hope you wont mind if we disturb you with questions even though after you left us to sunway :)

NA, happy with all the things learnt. Thank you

Can we have a session for the surviving sepsis campaign? Refeeding syndrome and the types of nourishing feed : when to start/what to start and when to change?

Day 4:

please give some suggestions of what should be improved
13 responses

NA

We can add some topics including GA machine checking, emergency drills and ICU topics if possible

It would be better if certain heavy topics can be separated so that the topic wont be difficult to digest. But overall it is a great program. Would love to have more mcq discussions so that we know what we dont know and have explanations directly :)

We should have this kind class or discussion at least once a month. It would give a platform to learn things at right ways. We have M&M and CME, however some of us could not attend due to elective cases.

Nil

Involves more topics

The course should be done regularly

More sessions with variety topics can be conducted

If possible to do more earlier class for junior. Maybe in 6months time from entering anaesth dept.

If there could be other sessions like ultrasound session or icu managment. This course really helped a lot. Thank you bosses!

thank you

No



Figure 5: Teaching done as leisure as possible



Figure 6: Students and Teachers aka Specialist and MOs in our Anaesthesiology Department

Conclusion

Teaching our junior colleagues should be conducted periodically to ensure patient safety. We as specialists in the department need to put in extra effort to build understanding and basic

knowledge by giving them direct teaching. This would encourage them to further self-study to improve their knowledge, especially in the era of the COVID-19 pandemic. In these last two years, exposure to OT and patient

contact were scarce, especially in the operation theatre. We hope this programme will create a learning environment and encourage our MOs to read and understand their daily anaesthesia and critical care practices.

Excellence from Madinah, The City of Our Beloved Prophet

by Dr Noorazwati Ismail

Hospital Kajang, Selangor, Malaysia

In the name of Allah, the most gracious and the most merciful. Praise to Allah with His Blessings. I was invited again by Tabung Haji to be part of the medical team for this year. My first experience as part of the medical team was in 2019, a year before COVID-19, and subsequently, Hajj was suspended for outsiders for two years. I got the offer letter through an email at the end of February this year and was appointed as an experienced anaesthetist. It was such short notice because Hajj season was just around the corner and so many things needed to be done as this was the first Hajj after the pandemic became endemic.

Everything went so fast and in a rush. We had to attend a few courses before going to the Holy land. Preparation was

slightly different because we needed to anticipate COVID-19 infection among Malaysian pilgrims during the Hajj season. I was selected as an advanced party team. Before our pilgrims arrived, we had to go earlier to prepare both Medical Centres belonging to Tabung Haji in Madinah and Mecca.

We worked every day from 7.00 am till 10.00 pm and our rest hours were only from 12.00 noon until 4.30 pm and 6.00 pm until 8.00 pm. There was no off day or weekend off for us; even though it was tiring, we were still happy and enjoyed working as a team. Tabung Haji also allowed us to perform the Hajj ritual while working and at the same time managing and treating sick Malaysian pilgrims throughout the season.



After accompanying an intubated patient to King Abdul Aziz Hospital, Mecca (2019)



Doctors and paramedics with Mecca Operation Director, Madinah Operation Director and Head of Specialist (sit on sofa from left to right)

What is the role of an anaesthetist in this medical team? Every year, three anaesthetists are selected to be part of this team. Two will be based in Pusat Rawatan Syisyah, Mecca and the third anaesthetist will be in Pusat Rawatan Roha Al-Madinah. In Mecca, one of them will be in charge of the Saudi Hospital and do daily visits to sick patients who require special care and management such as major operations, cardiology intervention, intubation and critical care. The second anaesthetist is in charge of the High Dependency Ward and is on-call together with other specialists and medical officers from various backgrounds and departments. They can be radiologists, orthopaedic surgeons, psychiatrists, and family medicine specialists. Our team were led by a physician who made decisions and planned for patient management.

The crucial events during the Hajj pilgrimage happen in the span of five to six days. It starts with mass movement during the Masyair namely for the wukuf in Arafah and onwards to Muzdalifah for half a night to pick up pebbles, and then to Mina for the stoning ritual (Rami; stoning the devil which is carried out over four days at the Jamarat Complex).

Wukuf literally means; silence or stop. Standing in the desert Arafah is done in silence from the 9th Dzul-Hijjah until sundown on the 10th Dzul-Hijjah and will remind pilgrims of the day of resurrection. Standing at Arafah is the most important ritual in a series of pillars of Hajj that each pilgrim must do as the culmination of the Hajj rituals. Hence, it will be invalid if the pillars of the Hajj pilgrimage are not done.

During Masyair, the medical team will be on standby to manage sick pilgrims in the field. Alhamdulillah, the condition was under control as no intubation or CPR was required. All sick pilgrims were able to be stabilised at the site and referred to Pusat Rawatan Syisyah or the nearest Saudi hospital for further management.

In 2019, I was in Mecca and was in charge of the High Dependency ward with an anaesthesia medical officer. During Masyair, I was tasked to follow our sick pilgrims who could not perform the Hajj ritual independently and was admitted to Pusat Rawatan Syisyah by Safari Wukuf. This initiative was introduced by Tabung Haji a few years ago to bring our sick patients by buses and ambulance to perform wukuf in Arafah on 9th Dzul-Hijjah. Without wukuf, the Hajj is null and void; therefore, it is imperative to ensure all Malaysian pilgrims can get Hajj, especially those unwell. After performing wukuf, they must return to Pusat Rawatan and rest until they are healthy to continue other Hajj rituals.

Interestingly, I was selected as part of the Madinah team this year. There were only three specialists at Pusat Rawatan Roha Al-Madinah. We had to rotate on-calls and sometimes help our limited number of medical officers doing ward work or in the emergency department. As an anaesthetist, I had an additional task: visiting sick patients admitted to the Saudi Hospital in Madinah. My visits were usually accompanied by a Tabung Haji Public Relations Officer (PRO) and a Pembantu Petugas Haji (PATUH) as a translator. We had to collect patients' information such as management details to update their condition daily into the SIHAT system to inform their family members in Malaysia.



During safari wukuf and accompanying sick pilgrims in a bus on 9th Dzul-Hijjah 1440H (2019)

Before and after Masyair, the leading causes of admission for both Pusat Rawatan Tabung Haji were respiratory problems such as pneumonia, severe acute exacerbation of asthma or COAD and followed by cardiovascular problems such as acute coronary syndrome. Heat exhaustion and severe skin diseases such as cellulitis and diabetic foot also sometimes required admission for antibiotics and minor procedures namely wound debridement and Ray's amputation. They would be referred to Saudi Hospitals if their medical problem worsened or required further intervention such as a major operation like amputation, cardiology procedure such as angiogram and cardiac bypass, intubation and critical care.

Alhamdulillah, there were no deaths recorded in Madinah this year. Only two sick pilgrims needed hospitalisation at King Fahd Hospital and Madinah Cardiac Center. They were able to go back to Malaysia on time following their original flight ticket to continue management and care. Only one death was reported, and there were thirty-three hospital admissions for Malaysian pilgrims this year. This was because the Government of Saudi Arabia was very strict with Hajj pilgrim selection. Only those less than 65 years underwent to perform Hajj most of whom were strictly screened by the Ministry of Health Malaysia during medical check-ups.

Our Director-General of Health Tan Sri Dato' Seri Dr Haji Noor Hisham bin Abdullah was also one of the Hajj pilgrims for this year. It was an honour to spend time with him at both Pusat Rawatan Tabung Haji. Alhamdulillah, he gave us good compliments on our preparation and services. In Sha Allah, there will be more plans and proposals for improvement to facilitate the



Doctors and nurses from High Dependency Ward in Pusat Rawatan Syisyah (2019)

medical team's best services to Malaysian pilgrims.

The Malaysian pilgrims come to this Holy Land with the slogan of 'Hadirku Sebagai Dhuyufurrahman, Kembaliku Dengan Kemabruran' and as part of the medical team, we will assist them with our motto 'Bersama Santuni Dhuyufurrahman', to ensure they are healthy and fit with Allah's Will to perform Hajj throughout the season and return safely to Malaysia on time. It was a great experience and moment while working there with good support and new friends as teamwork from different backgrounds under one roof. I was lucky

because I had two different experiences while working there, before COVID-19 at Mecca in 2019 and after COVID-19 at Madinah this year.

Every good word and every good piece of information in this short story is because of Allah's grace and blessings. Any mistake or wrong information presented is not intended because humans commit mistakes and perfection is Allah's characteristic. I am looking forward to working there again and hope Tabung Haji will give me another opportunity to serve our future Malaysian pilgrims during the next Hajj season, In Sha Allah.



Emergency physician, Anesthetist, Family Medicine specialists and Radiologist (2019)



Visit a patient at King Fahd Hospital, Madinah (2022)



With our Director General of Health, Tan Sri Dato' Seri Hj Dr Noor Hisham Abdullah (2022)



Visit a patient at Madinah Cardiac Centre (2022)



Referring a case to Saudi Hospital during masyair (2022)



Hyperbaric Oxygen Therapy



VOLUNTEERS NEEDED !!!

COUGH AND FATIGUE POST COVID-19???

Would there be any improvement in cough and fatigue experienced in the post-acute COVID19 period if hyperbaric oxygen therapy (HBOT) is given to the patients?

We want to determine whether hyperbaric oxygen therapy improves cough and fatigue during the post-acute COVID-19 period.

WHO?

- 18 years old and above
- Between day 28 to day 90 of COVID-19 diagnosis
- Was diagnosed with COVID-19 category 1 to category 3

WHERE?

- Hospital Angkatan Tentera Tuanku Mizan (HATTM), Wangsa Maju

WHY?

- Cough and fatigue disturbs activities of daily living and for now, there is no effective cure

HOW?

- You will be asked to filled up a questionnaire, pre- and post-HBOT treatment. We want to see any differences in cough and fatigue scores with HBOT

WHAT?

- 2 sessions of HBOT
- Compressed to 14m (2.4ATA) Each session lasts 90 minutes
- Assess symptoms post-HBOT

HOW MUCH?

- Volunteer basis, no charges or fee given

Ethics Approval

- Assessing the Effect of Hyperbaric Oxygen Therapy on the Amelioration of Cough and Fatigue Post Covid-19 (PKAT/JKE/30-10 15 Sep 2022)

INTERESTED?

PLEASE CONTACT:

Elise (Emergency Physician
Hospital Banting) at 012-9242 041

Jabatan Perubatan Hiperbarik,
Hospital Angkatan Tentera
Tuanku Mizan at 03-4145 4232



My Property Investment Journey; Between Calculated Risk vs Gambling

by Nabil Halim

Sultan Ahmad Shah Medical Centre @IIUM, Pahang, Malaysia

What should we plan today to secure our finances during retirement in the next 30 to 40 years?

As we are routinely busy with our responsibility in the hospital taking care of our patients, we seldom have time to prepare ourselves with knowledge about finances.

We take it for granted as we take comfort in the fact that we have stable salaries, and our noble profession will somehow secure our future later.

We forget and do not take this matter seriously, from the time we were in school until we finished medical school, and it goes on to the time when we hold our postgraduate scroll. We did not seek to empower ourselves with financial knowledge although it is one of the most vital knowledge we should know besides attending resuscitation for a code blue in the hospital (I joke... well, not really... LOL).

I would like to share this with my fellow colleagues within the anaesthesia fraternity, although I am not the best person to do it because I myself am still new in this property investment journey and, of course, I am not a certified financial planner.

Let me share some of my experiences in my journey of investment in real estate. Hopefully, all of you can take it as superficial exposure to this portfolio as

an investment tool to achieve your financial goal.

Like in our clinical training during the Master's programme or subspecialty training in our area of interest, it is just not enough for us to do the training by reading a book and practising to do it ourselves, without any guidance or supervision.

We know that the best way to ensure our patient's safety is by reading the textbook or academic article and reviewing and practising good clinical practice just like how we described our medical oath. Of course, vigilance, guidance and supervision from our dedicated and experienced consultants also play an important role.

All of the above are essential to ensure the safety of our patients and also ourselves as anaesthetists.

Unfortunately, when it comes to this investment journey, most of us failed to follow the steps like the way we navigate our clinical practice. We easily trust the salesperson in the sales gallery we went into, we easily trusted the hearsay we heard from our colleague or friend we just met in Kopitiam for 30 minutes.

In the end, we bought the wrong property which made us miserable and unfortunate for the rest of our careers because we need to pay for it every month. Owning this "wrong" property

makes us "bleed money" every month despite us working very hard for it.

Here I share with all of you the tips and quick tricks toward exercising smart property investment. It can be equated to the qSOFA (ie quick Sepsis-related Organ Failure Assessment) assessment we use in our practice in anaesthesia :D

Let me share with you about **FIRST 50%** and **NEXT 50%** in my property investment journey.

What is the FIRST 50%?

The first 50% we should know are:

- The process of selling and purchasing of the property
- Financing loan or mortgage
- Financial screening and preparation
- Legal process and fee
- Finding the right property (either for own stay or for investment purposes)

Most of us maybe know half of the basic things I mentioned above, maybe about the sell and purchase process or mortgage loan or housing loan, maybe some others would already know the fees involved during the purchase of the property.

With Google and the internet at our fingertips, I am sure we can search and find it easily, either in general or with specific details about it.

For a person like me, even though we can read about it on the internet, I

would like to speak to an expert in this industry to teach and guide me further. The experts dabble in this industry on a daily basis, so I need to get their advice for this big decision.

To be safe on this journey, we have to prepare ourselves by having a mentor. To learn about structuring your debt and finances we need to have a mentor, to learn about mortgage loans we need to have a mentor and to know the process for selling and purchasing, we also need to have a mentor.

I would like to share with all of you the most precious lessons in my journey which is finding the right property for investment. There is no point to master the other four things I mentioned above if in the end we still bought the wrong one.

The abundance of information out there also will make us confused and not know which one to make as a good reference.

Sadly, there is a group of people who does not actually care about the fundamentals of investment property and only believe in the idea "Just buy any property lah because the price confirmed will increase in value and capital!".

Here I share with you seven criteria that we should look for when seeking out the right property to invest:

1. New vs Old
2. Median price
3. Tiering area
4. Booster
5. Supply
6. Maturity point
7. Multiple rental option

The **NEXT 50%** is.....



The most important part in the previous article I mentioned about finding the right property by checking off a list with seven criteria.

By having this knowledge about seven criteria, we can be assured that we have placed ourselves within the 50% safe margin of investment.

Today I will share about the **NEXT 50%** we need to know before we begin investing in property.

Are you ready to learn?

"BUYING THE RIGHT PROPERTY IS JUST 50% OF THE STORY, THE OTHER 50% IS KNOWING WHAT TO DO WITH IT" - My mentor always highlighted this mantra to me.

Have you ever heard about two people buying the same property in the same area with the same type of unit but these two people had a huge difference in their rental rates per month? Does this story sound familiar to you?

That is why it is very important to learn about what we can do with the property once we buy it.

We can buy the same unit but if we do not know the plan or have any strategy to make full use of it, we shall have very different results.

Here are the three biggest important components I will share with you in this **NEXT 50%**;

1. Strategy
 - a. Tenant profiling
 - b. Game plan
 - c. Budgeting
2. Make-over
 - a. Pre-renovation condition
 - b. Lifestyle design
 - c. Execution
3. Rent
 - a. Rental marketing
 - b. Rental management
 - c. Services and maintenance

These three components need to be identified and thought out before jumping further into this investment journey in real estate.

We are not buying some foods or snacks to eat.. rather, think of it as though we are heading into a battle to put ourselves in a bigger and longer commitment with the bank.

It is really related to our strategy to purchase the right property that meets our financial goal and needs to match with market demand, etc.

Hopefully, this knowledge will safe guard you from buying the wrong property.

Looks interesting right? For more details can follow me further via my social media or Facebook.

Malaysian Society of Anaesthesiologists & College of Anaesthesiologists Annual Scientific Congress 2022

MyAnaesthesia 2022: Forging Onwards to a Collaborative Unified Success

by Associate Professor Dr Azarinah Izaham

"Forging Onwards to a Collaborative Unified Success" was the theme for MyAnaesthesia 2022, the yearly congress organised by the Malaysian Society of Anaesthesiologists (MSA) and the College of Anaesthesiologists (CoA), Academy of Medicine of Malaysia.

This was the first hybrid congress and the Organising Chairperson, Professor Dr Ina Ismiarti Shariffuddin, and the Committee worked very hard to organise the Congress during the endemic era which meant new and innovative ways of delivering the Congress and its content had to be embraced.

A total of 683 physical and 557 online delegates registered for the Congress. The Scientific Committee led by Dato' Dr Yong Chow Yen ensured that the programme, delivered by 18 foreign speakers and 52 local speakers, was current and relevant.

The Congress consisted of four pre-congress workshop, six plenary lectures delivered by distinguished speakers from all around the world, three hybrid tracts which mainly consisted of symposium lectures and one physical tract for in-congress workshop.





The Opening Ceremony held on 6th August 2022 was officiated by the Deputy Director-General of Health (Medical), Dato' Dr Asmayani Khalib. During the ceremony, Professor Dato' Dr Patrick Tan Seow Koon was conferred the MSA Honorary Membership in recognition of his enormous contributions to the anaesthesia fraternity and to training in anaesthesia and critical care. Three MSA and CoA publications were launched at the Opening Ceremony which were the Journal of the Malaysian Society of Anaesthesiologists, Recommendations for Patient Safety and Minimal Monitoring Standard during Anaesthesia; and Recovery and Recommendations for Ultrasound Guided Vascular Access (5th Edition).

The Annual General Meetings (AGM) of both the Malaysian Society of Anaesthesiologists as well as the College of Anaesthesiologists were also held in conjunction with the Congress. The AGMs were held on 5th and 6th August 2022 respectively and were well attended by members physically. Elections were held for the MSA Executive Committee and the CoA Council for 2022-2023.

Prior to the CoA AGM, Certificates of Completion of Training in the Parallel Pathway Anaesthesia Programme were presented to Dr Indra A/P Sadasivam, Dr Ameerah binti Abdul Razak, and Dr Muhammad Amir bin Ayub by the Director-General of Health, Tan Sri Dato' Seri Dr Noor Hisham Abdullah. Congratulations to all the recipients.



The poster and free paper presentations were well represented by researchers from all over Malaysia. The esteemed international judges from Singapore and South Korea and local judges were very impressed by the high standard of the scientific content of the papers presented. Dr Kevin Tan Teck Meng and Dr Ignatius Wong Hsun-Hong from Universiti Kebangsaan Malaysia won the MSA Award and MSA Young Investigator Award respectively. Dr Ong Soon You from Universiti Malaya, Dr Nur Ainina Zulkeplee from Universiti Malaya and Dr Wazir Ahmad Haja Sahabudeen from Universiti Kebangsaan Malaysia won the first, second and third prizes for their E-poster Presentations while Dr Camilla Ngen Jiale from Hospital Umum Sarawak won Best Case Report/Series prize. Congratulations to all the winners.

The Presidents' Dinner was held on 6th August 2022 and the Director-General of Health, Tan Sri Dato' Seri Dr Noor Hisham



Abdullah, was the guest of honour. The dinner was attended by the organising committee and faculty members, the winners for the free papers and posters and the recipients of the Dato' Dr S Radha Krishnan Sabapathy Best Master Student Award; the latter were Dr Rodhiyah Shahar from the Universiti Sains Malaysia and Dr Saw Yee Horng from the International Islamic University Malaysia respectively for the 2021 and 2022 Awards.

The Congress also featured a total of 44 exhibition booths (both physical and virtual by the pharmaceutical and

biomedical industry partners. The physical booths were well patronized by delegates enjoying their first face-to-face meeting in a long time.

Most of the delegates continued attending the Congress until the closing ceremony and witnessed the lucky draw for delegates who had visited the physical booths. It was indeed a very fun and exciting way to end the Congress. Professor Dr Ina Ismiarti Shariffuddin delivered the closing remarks followed by a welcome note Dr Hasmizy Mohammad to Kuching, Sarawak - the venue for the 2023 Congress.

MyAnaesthesia 2022 had its challenges, and the opportunity for us to learn how to organise a hybrid conference on this scale. Thankfully, most of the technical issues which arose were addressed smoothly and quickly and the delegates were very happy with the organisation of the Congress. The Organising Committee had evidently learnt much from the previous year's online Congress and this year as well and all these would be well noted in the preparations for future Congresses as well as pointers for future meetings, seminars and workshops. We look forward to meet up with all of you in Kuching, Sarawak come August 2023.







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NATIONAL ANAESTHESIA DAY 2022

Hospital Al-Sultan Abdullah UiTM, Puncak Alam

by Dr Ivy Sim Chui Geok

Universiti Teknologi MARA, Selangor, Malaysia

It was the 16th October again, the day that the birth of anaesthesia is celebrated annually. It was exciting indeed as it was the first time that the celebrations could once again be held in person. It was also the first time that UiTM's Department of Anaesthesiology and Intensive Care was entrusted with co-organizing the event with the Malaysian Society of Anaesthesiologists and the College of Anaesthesiologists.

The day fell on a Sunday and, boy, was the weather a glorious one with sunny blue skies filled with soft white clouds as if to dispel the pandemic's cloud of gloom. The day was perfect for a 5K run around the lush campus of UiTM Puncak Alam. We had 260 registered runners. Everyone had collected and proudly displayed their specially designed 'Dri-Fit' tees inspired by an endless Cormack-Lehane 1 laryngoscopy view. This creative motif was courtesy of the run's head honcho, Dr Afifah Samsudin, who put together a wonderful run event from start to finish. It was a costume event with a chance to win an additional prize for best costume and so we had many colourful characters

indeed from movie character references, to international traditional outfits to random aliens running around. There was an energetic warm-up Zumba session by the hospital's netball players to the beat of the Korean Boyband BTS's 'Run' (the acronym of which was chosen expressly to represent our local theme this year, 'Beyond The Screen'). Just as the runners were awaiting release, YB Tengku Zafrul, the Minister of Finance rolled up dressed as a doctor nonetheless complete with a white coat and stethoscope to boot! We were also

joined by Hospital Al-Sultan Abdullah's director, Professor Dr Sazzli Shahlan Kassim and Dato' Sri Dr Hj Irmohizam Ibrahim, member of UiTM's board of directors. MSA Exco and CoA Council also arrived early to cheer on the runners. Dr Fauziah Ahmad, the organising committee's bubbly director, cranked up the runners' energy levels to 110% and then handed off the mic to Professor Dr Karis Misiran, UiTM's and indeed the stalwart of the anaesthesiology fraternity, who duly the runners onto the track flagged off.



Meanwhile, on the other side of the building, a different kind of fun was gathering. The 'Battle of the Gas-men' (and women!) Telematch event was held simultaneously with the run event. There were 8 teams (all in coordinated team uniforms) from the various hospitals who participated in this event. There was 'Bowling Sevo' using coconuts as bowling balls and empty sevoflurane bottles as bowling pins which provided the context and an array of equally snazzily-named and designed games including 'Dizzy Drugs', 'Meds in Spoon', 'Twin Run' and 'Bring Me The Balloon'. The 'CCF-Coffee Club' from HKL took home first prize, followed by 'Peacemakers' from HPUPM, 'HSAS GMOT' from Hospital Shah Alam, and 'Ampang Amazing Team' from Hospital Ampang.

Back at the run's finish line, time simply flew by and we were caught somewhat off-guard by the arrival of the first runner in under 20 minutes! The first prize winner received RM300 along with a finisher medal and a refreshment pack.

Inside the cool shade of the glass-structured main lobby, 'Anjung Zam-Zam', visitors were greeted with a collection of informative booths targeted at members of the public. Booths such as a 'Mock OT' invited visitors to wander around a typical



operating theatre set up which was even complete with an anaesthetic machine and fiberoptic intubation scope. There was an Acute Pain Service Booth where visitors could learn about the various methods of pain relief offered to patients undergoing surgery and labour, a booth on Organ Donation run by the National Transplant Resource Centre, and a CPR demonstration booth. Our colleagues from UiTM's Faculty of Dentistry were extremely supportive of our event and had set up a dental check-up booth for members of the public. We were also grateful for our sponsors and some had even organised booths to improve awareness of hand hygiene, rehabilitation equipment, and our private wing, UPSC had a welcoming booth detailing their services. The following day, Pusat Darah Negara held a blood donation drive during a working day in conjunction with National Anaesthesia Day.

We did not forget the children! There was a bouncy castle to suit the most hyperactive child, a clown

generously dispensing balloon animals on demand, and colouring activities galore. There was also tantalizing free ice cream and a number of food trucks for the adults too who lined up just outside the hospital.

After an initial morning lull after the run (fun) and games, UiTM's Vice Chancellor, Professor Datuk Ts Dr Hajah Roziah Mohd Janor, arrived splendidly with all smiles and ready for the officiation ceremony. As everyone adjourned to the auditorium, our Emcees greeted the honoured guests which included MSA and CoA's office bearers and UiTM's Deans of Medicine and Pharmacy, and the various Anaesthesiology Head of Departments who took time out to join us. They then went on to give a cheery shout-out to the representatives in attendance from the various hospitals (MOH, Universities and Private Practice) in the Klang Valley.

The ceremony kicked off with the hospital director, Professor Dr Sazzli Shahlan Kassim, who delivered the welcoming speech. Dato' Dr Yong Chow Yen, as the MSA President-Elect and Professor Dr Marzida Mansor, the



CoA President, then gave inspiring speeches on how anaesthesia came about, and what it means for the practice of modern medicine and surgery. It made us all truly humbled and proud of the field that we represent. The World Federation of Societies of Anaesthesiologists' World Anaesthesia Day 2022 theme 'Medication Safety' was also highlighted and the critical role that anaesthesiologists play in enhancing safety in this respect was reflected upon.

We then sat back and enjoyed a video montage of the talented work of content creators for NAD 2022 posters and videos. This was followed by specially prepared videos to showcase the launch of MSA's redesigned website, the MSA's Yearbook 2021-2022, and the Atlas of Ultrasound Guided Lower Limb Regional Anaesthesia.

Professor Datuk Ts Dr Hajah Roziah then proceeded to regale us with her past experiences with anaesthesia before graciously declaring open the National Anaesthesia Day 2022. We then invited all the speakers, Dato Dr Jahizah Hassan (MSA Chairman), Dr Zalina Abd Razak (MOH Anaesthesiology Head of Service), Professor Dr Rufinah Teo and Professor Datin Nidzwani Mahdi (MSA Yearbook editors), Dr Azrin Mohd Azidin (Atlas main author), Dr Adlin Dasima Abdul Kadir (Hospital Al-Sultan Abdullah Anaesthesiology's Head of Department), and Dr Fauziah Ahmad (Event director) to the stage. As everyone huddled around the 3 life-sized balloons, a resounding 'pop' released confetti and a curtain of

balloons into the air revealing the launch products.

Next up were prizes! We had posted a video competition in the weeks leading up to the day with the theme 'Beyond The Screen' which simply meant that there was more to an anaesthesiologist's task than to remain

behind the proverbial OT drapes. This inspired 18 teams from 16 hospitals around the country to submit their video essays on what the theme meant to them. Just before the winner announcement, a wonderfully curated video with snippets from submissions distilled a great sense of national camaraderie and aptly summated all



that we do. In this sense, every submission achieved its goal, even the ones that tickled our funny bones. Alas, there can be only one prize winner and after careful deliberation by the esteemed panel of judges (Professor Dr Ina Ismiarti Shariffuddin, MSA President, Professor Dr Marzida Mansor, Professor Dr Karis Misiran and Dr Omar Sulaiman) of the 5 videos with the highest number of 'Likes', Team 'Dr Sleep' from Hospital Selayang emerged victorious. Their inside view of the deep and lasting impact an organ donor has, faithfully

brought home the message to 'Save a life' which earned them RM1000. First runner-up was 'Raintown Rangers' from Hospital Taiping and second runner-up was 'Pujangga HCTM' from Hospital Canselor Tuanku Muhriz, UKM.

We then went on to crown the most creative costumes from the 5km costume run which was a 'Runaway Bride' and a deeply injured and dramatic man with an alien hoisted on its back with each taking home a brand

spanking new iPad! There was even a lucky draw with attractive appliances up for grabs which kept everyone on the edge of their seats.

All in all, despite several hiccups and the roller coaster ride of preparations, the event achieved its overarching goal to bring us together, be it physically or virtually via videos and social media, and to commemorate this day in which anaesthesia improved the lives of so many and continues to do so to this day.



UMMC Department of Anaesthesiology Family Day 2022 - PICNIC & POTLUCK AT FRIM -

by Dr Ronny Ikmal bin Ahmad Kamil

University Malaya Medical Centre, Kuala Lumpur, Malaysia

On a drizzling and cloudy Sunday morning of 30th October 2022, the Anaesthesiology Department from University Malaya Medical Centre successfully organised a Family Day involving our comrades from the Operating Theatre (OT) teams and the Intensive Care Unit (ICU) teams.

For the past two years, we had not gotten the opportunity to get together, given the imposed restrictions due to the worldwide COVID-19 pandemic. After two years of being silo-ed away in the cold OT and hectic ICU, we discarded our 'OT scrubs pyjamas' (metaphorically) and realised the vision of our Head of Department, Associate Professor Dr Loh Pui San, for the staff to pump out some adrenaline and increase our serotonin by enjoying ourselves with some outdoor activities together.

This year, the greenery themes led us to choose the Forest Research Institute Malaysia (FRIM) as our location to celebrate the Anaesthesia Family Day, away from the hustle and bustle of hectic city life. The forest supplied the oxygen delivery we needed most to revitalise. Our children had the

opportunity to dip their feet or even their torsos (in fact, their whole bodies...) in the cold waters of the FRIM waterfall.

The weather was very much permissible to our conduct of events. The cumulus and nimbostratus cloud that was constantly present, allowed us to run and scream without shedding much sweat. Luckily, the rain stayed as drizzle and alternated with a clear sky, so we managed to start the gathering at 8.00 am and wrapped up at nearly 2.00 pm.

This Anaesthesia Family Day aimed to inculcate a sense of team building in addition to providing ample opportunities for everyone to know each other better. Despite spending long hours in OT or ICU which had been considered our second home, we might not know our teammates more than the cursory surface-level details, due to the fast-paced nature of our practice. With the aspiration to strengthen the unity among our comrades and their pillar of strength - their family members - we came together, putting aside our differences and hierarchy to rejoice and appreciate each one of us. This gathering also allowed us to unwind after hectic and weary years of being



the front liners battling the popular nemesis, none other than COVID-19.

The event started with the registration of participants who were then divided into four different team group for games and activities (namely RED, BLUE, PURPLE, and GREEN). As many as nearly 150 participants came to grace our event.

Our cheerful Master of Ceremony (MC), Dr Rowan Ikmal, indeed performed his duty extraordinarily well, and we were all amazed by his hidden talent as the





MC which put smiles and cheers to all participants. The opening recitation of prayers was led by MA Encik Baharin. This was followed by an opening speech by Associate Professor Dr Loh Pui San who expressed her gratitude to the organising committee led by Dr Ronny Ikmal and his wonderful team members consisting of Dr Karen, Dr Insyirah, Dr Jeremy, Dr Premjeet, Dr Syahirah and Dr Syamel.

The event also welcomed the President of College of Anaesthesiologists, Professor Dr Marzida Mansor, and the President of the Malaysian Society of Anaesthesiologists, Professor Dr Ina Ismiarti Shariffuddin, not to mention other esteemed guests included Professor Dr Mohd Zulkiflee Abu Bakar (the current Deputy Director of UMMC - Surgical Division), Matron Salawati, Matron Zaida, Sister Bayani and Sister Hafizah as heads of both OT and ICU respectively, as well as Professor Dr Nor'azim Yunus and Professor Dr Rafidah



Atan, our Intensivists. Let's not forget all our other professors and consultants, lecturers, Masters trainees, medical officers, housemen, medical students, nurses and supporting staff who took their time to join us for the events.

Prior to starting the games, we were encouraged to carb-loading ourselves in order to gain adequate ATPs* to win the games. Food was in abundance. Participants enjoyed the scrumptious food which included homemade nasi lemak by Professor Dr Rafidah, laksa by our nurses and many other home-cooked dishes that filled our 'ruminant stomach'. There was also satay, roti canai, fried mee hoon and various deserts.

We started off with the "Big Foot Race" in which a team of ten people got into pairs with their legs tied with rope. They had to work together as a team to win the race from point A to point B and then back to point A again. It was total fun as indeed we had to strategise synchronized movements and followed the leader so as not to fall and ultimately to win the game.

The next game was the "Catch or Splash Relay Race", which was a group event in which each group had to transport as many balloons as they could. The catch was that participants could only transfer the balloon backwards, throwing them while facing the opposite direction, and also the person on the receiving end could only use their shirt.

This was followed with the kids' games, which started off with the "First Pit Stop of Balloon" race, whereby the children had to jump with balloons in between their legs to the next pit stop. This was followed by the second pit stop that was "Eat The Doughnut", in which the kids had to eat a string-attached doughnut without using their hands.

The final pit stop for the kids was *"Run To The Finishing Line With The Ping Pong Ball"* (quite a mouthful to say). Having eaten their doughnuts, the kids had to run to the finishing line while holding the ping pong ball in a spoon, making sure that they do not drop the ball, as this would mean they needed to start all over again.

The most awaited event of the day was the *"Tug Of Love"* a.k.a tug of war. The saying "never judge a book by its cover" summarised the event very well. Indeed, despite the petite figures of the women in team B, they devoured (again, metaphorically) the sleek women in team A, two out of three times, to take home the title of *Queens of Tug of War*. As for the men, team A defeated team B who were brought to their knees after two pulls.

We concluded our gathering at 1.30 pm after the prize giving ceremony with the blue team as the overall winner for the games.

We would like to express our gratitude to the excellent and superb organising committee, the donors, cooks, players, entertainers, master of ceremony and others who played a role or multiple roles directly or indirectly. Our gratitude to all who supported us and those who joined the events.

We feel that we are not exaggerating when we say that the day's event went very well and according to plan, all praises to Allah. By the end of the day, we felt revitalised and happy, and we got to know each other better than before, and our team-building effort was a success. Let's hope we can organise similar events like this soon. Well done Anaesthesiology Department UMMC!



Glossary

*ATP: adenosine triphosphate... mentioned here in its full terminology for completion's sake.

HOSPITAL PULAU PINANG

National Anaesthesia Day 2022

by **Dr Sarah Farhana binti Hafiz Steven Law, Dr Tan Kai Ming**
Hospital Pulau Pinang, Penang, Malaysia

Our National Anaesthesia Day celebration was held on 18th October 2022, just a few days shy of the actual date, 16th October. It is a day that is held in commemoration of the first successful demonstration of anaesthesia by William T.G. Morton. This year's celebration has long been awaited after a two-year hiatus caused by the COVID-19 pandemic. "Beyond the Screen" is the theme for this year's event and it was mainly to acknowledge our heroes working hard behind the scenes in the operation theatre and the Intensive Care Unit.

This year's Organising Committee was headed by Dr Sivasangari and her hardworking team of doctors, nurses, assistant medical officers and support staff. Preparations were made well in advance in anticipation of the big day.

We had a colouring and hand-washing competition that was held in advance. These events were participated by children from the Paediatric ward and our Anaesthetic staff respectively. A pop-up booth was set up in the foyer one day prior, displaying various information regarding anaesthesia to the general public.

Finally, the much anticipated day dawned upon us on a wet and breezy Tuesday morning. We started our celebrations with an adrenaline-pumping Zumba session led by Dr Azlina Yati and her team. It was an energy-packed session with participants dancing in tune to the lively beats playing in the background. After catching our breath, it was time to officially start our National Anaesthesia Day celebration.

In attendance, we had Dato' Dr Ma'arof Bin Sudin, the Penang State Health Director; Dato' Dr Teo Gim Sian, the Hospital Director; and Dr Khoo Teik Hooi, the Head of Department of Anaesthesia and Intensive Care. Dr Khoo gave the opening speech, followed by Dato' Dr Ma'arof who officially launched our National Anaesthesia Day with a cute balloon gimmick and a cake-cutting ceremony.

Subsequently, a series of video montages were played. First up was our award-winning ASMIC video. It showcased the hardships we faced during the two years of the COVID-19 pandemic. Next, we had an appreciation video for all our unsung heroes who worked tirelessly during the pandemic. Help was offered from other departments and their kindness shall



Warm-up with early morning Zumba

never be forgotten. A special moment of gratitude was given to Dato' Dr Lim Chew Har, the Consultant Intensivist of Hospital Pulau Pinang, for her outstanding contribution during the COVID-19 pandemic and for all her tireless years of service. The final video was the department's entry into the National Anaesthesia Day video competition. Although we did not win the competition, we had a blast filming the video.

The day continued with a prize-giving ceremony for the colouring and hand-washing competition winners. The audience applauded merrily as winners received their well deserved awards in glee.

To end the day, a live demonstration of a mock COVID-19 ICU was set up in the foyer. This effort was headed by Dr Gaithri and her team, through which we had a glimpse into the many challenges we faced at the height of the pandemic. Attendees appreciated the ICU layout and the various equipment used, such as the ventilator, ICU bed,

infusion pumps and the CRRT machine. Even the doctors and nurses were dressed in full PPE and PAPR. The main aim of our mock COVID-19 ICU was to give a glimpse of the scope of work done to manage all our ill patients in the ICU to the public.

Anaesthesia is a speciality that is usually under-represented, as our encounters are primarily in the Operating Theatres or Intensive Care Units. Our field of

medicine has advanced dramatically since the discovery of diethyl ether and is still rapidly evolving. We are grateful to be given a chance to celebrate such a momentous occasion. Till next year, Happy National Anaesthesia Day.



Mock ICU demonstration



Honored guests in a sea of purple



Group photo

ANAESTHESIA DAY & WORLD SIGHT DAY 2022

KPJ Pahang Specialist Hospital

by **Dr Haslan Ghazali**

KPJ Pahang Specialist Hospital, Pahang, Malaysia



Kindly scan the QR code to
KPJ Pahang FB page to look
at more pictures of the event

Another year has passed, and it's that month of October when we celebrate our Anaesthesia Day. Anaesthesia Day falls on the 16th October every year. For KPJ Pahang, we had been celebrating for the last two years. Last year, we combined the celebration with our Ophthalmology colleagues. Their World Sight Day falls on the 13th October every year, so it was a double celebration for KPJ Pahang. Last year due to COVID and social distancing, our celebration was done virtually. Despite that, we managed to organise a successful celebration filled with quizzes, games, a forum and more.

This year, we planned something bigger since social gatherings were allowed with less strict SOP (standard operating procedure). We had a joint celebration with Ophthalmology that lasted a whole week like last year. It started with an exhibition at the hospital lobby consisting of anaesthesia posters and equipment, medical eye checks, a CPR booth teaching CPR, a massage booth by LPPKN, an Organ Donation drive booth and a Blood Donation drive. The event was held throughout the week with the opening ceremony done on the morning of Friday, 14th October 2022. We had a speech by the CEO Encik Omar Bawadi; the Ophthalmology head of department, Dr Siti Sarah; and the anaesthesia head of department, Dr Lukman Mokhtar. We also had a forum by Dr Siti Sarah and Dr Ashri, our anaesthesiologists on the benefits of labour epidural. In conjunction with the National Anaesthesia Day celebration, we also submitted a video for the video competition. On Saturday, 15th October 2022 we had a gala dinner with the

theme "Masquerade". It was held at the Sri Manja Boutique Hotel in Kuantan and involved almost 170 people mainly from KPJ Pahang. We got Azizi from AF (Akademi Fantasia) 1 to host the event. Everyone had a great time. People were

dressed up for the occasion in their most lavish attire. There were all sorts of masks worn that night. There was fun and games, a talent show competition and also lucky draw prizes. The dinner ended close to midnight.



On the morning of Sunday, 16th October 2022, we organised a "FUN RUN". It was at Taman Gelora Kuantan and a total of 120 participants from KPJ Pahang joined in the run. There were two categories, 3km and 5km runs. Participants got their run kits consisting of T-shirts, towels and

snacks. The medals were given at the end of the run. The kids also had a colouring competition, and lucky draw prizes were given that day. BMW Kuantan also brought the new iX3 for the participants to look at and test drive. It

was a successful Anaesthesia Day celebration that lasted a week. A very tiring week for my wonderful committee team and me. Wonder what we're going to have for the celebration next year....? :)



World Anaesthesia Day 2022 Celebration

Indian Society of Anaesthesiologists (ISA)

Thrissur City Branch, Kerala India:

A Celebration Away from Home



by **Dr Sushila Sivasubramaniam**

Sunway Medical Centre, Selangor, Malaysia

During World Anaesthesia Day celebrations, I happened to be in the state of Kerala which is in the south of India, on the Malabar coast of India. Each state and city have branches of the Indian Society of Anaesthesiologists. This year also coincided with the Society's 75th Platinum Jubilee. I was introduced to Dr Arun Kumar who was the Secretary of the ISA branch at Thrissur, by Dr SSC Chakra Rao, a past President of the ISA. Dr Arun Kumar and I are happy to contribute this article to the Berita Anesthesia. Thrissur is the cultural city of Kerala. The theme for this year was "Medication Safety". Their vision:

- To raise worldwide awareness of these ongoing concerns and to encourage public bodies and the general public to use it as an advocacy tool and to carry out the successes of the global anaesthesia community
- To improve anaesthesiologist's presence in patient care
- To develop skill initiatives for the members' beneficial
- To also develop Multi-dimensional approach for students' academics
- To recognize anaesthesia professionals and give more awareness to the students, junior doctors community

- To improve wellness of doctors and medical students
- To invite national and international collaboration for the benefits of members and more

The World Anaesthesia Day celebrations kick-started at Thrissur with the RECEPTION of the ISA NATIONAL FLAME torch from the ISA branch of, Palakad, Kerala, on 14th October 2022. This flame had travelled more than 1000 km within the state of Kerala before it was received in Thrissur. This travelling flame was a part of the platinum jubilee

celebration of National Indian Society of Anaesthesiologists (ISA National) and it had yet to travel all the way to New Delhi from Thrissur. The flame from Kerala was carried to New Delhi by the State President and Secretary after they received it from the ISA, Thrissur branch President. Once all the flames from all the states in India reached New Delhi, they were taken amass to Karthavya Path, India Gate, New Delhi. It was a memorable and thrilling moment for the ISA and all anaesthesiologists in India. This will go down in the history of the Indian Society of Anaesthesiologists.



The Torch



Indian Gate

In India, Anaesthesiology as a speciality is not much known outside the hospital. To create awareness, a cyclothon was conducted to spread the message of awareness about anaesthesia among the public. Sixty Anaesthesiologists from Thrissur took part in the cycle rally. To make the celebrations more inclusive, a flash mob was conducted by GA

technicians. ISA THRISSUR also hosted ISA Kerala state world anaesthesia day celebration at the Elite International Hotel on 16th October 2022. The programme was Inaugurated by State President Dr Shamsad Beegum. The message for World Anaesthesia Day was delivered by Dr Unnikrishnan, a Senior Anaesthesiologist of Thrissur.

The highlight of the event was the anaesthesia fashion show which encased prominent people who made their mark in the history pages of Anaesthesia. Thus, it was a treat for the eyes when Dr WTG Morton, Dr Crawford Long, Dr James Young Simpson, Dr John Snow, Dr.Rupa Bai Furdoonji (Indian first female anaesthesiologist), Dr August



The Cyclothon 14th October

Bier, Dr Virginia Apgar, and many more took the ramp walk while their contributions were enumerated in the background. Definitely only the world of Bollywood could come with something like this!

An Ottan Thullal about anaesthesia was performed by Artist, Kiron whose lyrics were penned by two senior anaesthetists, Dr Ravi and Dr Bineesh. Ottan Thullal or Ottamthullal is a recite-and-dance art-form of Kerala, India. It was introduced in the eighteenth century by Kunchan Nambiar, one of the Prachina Kavithrayam (three famous Malayalam-language poets). The folksy performance, often laced with humour intended at criticising the society, is accompanied by a mridangam (a barrel-shaped double-headed drum) and/or the handy idakka (a Kerala traditional hourglass drum) besides a pair of ilathalam cymbals (a metallic musical instrument which resembles a miniature pair of cymbals). It touched upon the various anaesthesia techniques and the never ending battle of wits between the Anaesthesiologist and Surgeon.

Dance, music and a variety of entertainment followed with the participated of postgraduates from three medical colleges. There was a total of 108 participants who attended making the celebrations of World Anaesthesia day a grand success!



Dr Arun Kumar on the right and a Ga technician I also met on the left



Elite International Hotel



Crawford Long, James Young Simpson, WTG Morton (L to R)



First Day Cover- Impressive!!!



The Ottan Thullal

VIRTUAL 11th Biennial Conference on Cardiopulmonary Bypass 2022

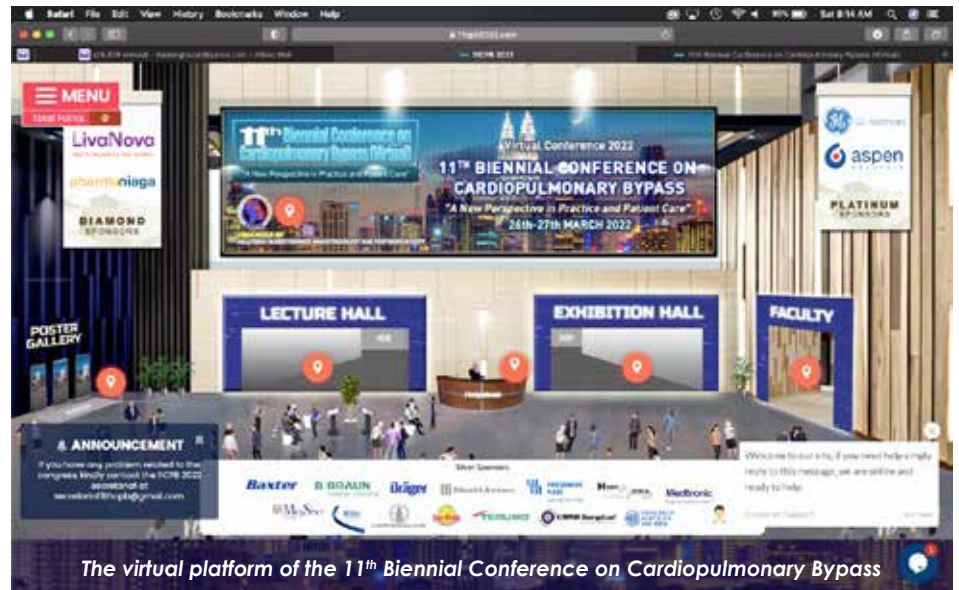
by Dr Hasmizy bin Muhammad

Sarawak Heart Centre, Sarawak, Malaysia

The Malaysian Cardiothoracic Anaesthesiology and Perfusion Society (MASCAP) organised a virtual 11th Biennial Conference on Cardiopulmonary Bypass from 26th to 27th March 2022. This was the first conference organised by MASCAP since its inception in 2017, although the Society has been organising multiple meetings and workshops to ensure continuous education for its members. The previous editions of the Biennial Conference on Cardiopulmonary Bypass were organised by either the perfusion societies or the Ministry of Health's cardiac centres.

The conference's theme was "A New Perspective in Practice and Patient Care". This theme was chosen because all health practitioners had to adapt to the COVID-19 pandemic in their daily lives and professional patient care dealings. Because of the unprecedented situation with the ongoing challenges in the COVID-19 pandemic, the Organising and Scientific Committee decided on a virtual conference with a comprehensive and well-distributed scientific programme that would benefit delegates of all levels.

The conference was inaugurated by the Director-General of Health, Ministry of Health, Malaysia, Tan Sri Dato' Seri Dr Noor Hisham bin Abdullah. In his speech, the Director-General of Health welcomed all delegates and eminent speakers from all over the world to the



conference. He stated that the Cardiothoracic Anaesthesia and Perfusion unit is the backbone of this country's successful cardiac surgical programme, as its primary purpose was to provide the safest anaesthesia and perfusion services in the face of a pre-existing impairment of the heart and lungs. He also stated that the COVID-19 pandemic has revealed the cardiothoracic anaesthesia team's potential as many senior cardiac anaesthesiologists in the MOH were involved in pandemic strategic planning and COVID ICU setups.

The two-day virtual conference featured numerous advanced topics presented by local and international speakers. Eight plenary lectures, two lunch-sponsored symposia, and twelve symposia were organised into three virtual tracks. The symposium covered

topics such as Cardiac Intensive Care, Surgery and Cardiology, Patient Blood Management, Cardiac Anaesthesia, Perfusion, Cardiac Nursing Care, Echocardiography, Cardiovascular Intervention, Extracorporeal Membrane Oxygenation, Thoracic Anaesthesia, and Congenital Heart Disease. The delegates gained knowledge and benefited from the most recent clinical practice updates from these symposia and the most recent medical products and technologies from the e-booths of the supporting companies.

There were 40 international and local speakers, including cardiac anaesthesiologists, intensivists, cardiac surgeons, cardiologists, paediatric cardiologists, transfusion medicine specialists, rehabilitation specialists, perfusionists and nurses. The international speakers were invited from



Qatar, Australia, the United Kingdom, China, Germany, Switzerland, South Korea, Singapore, Japan, Canada, Thailand, Saudi Arabia, and Hong Kong.

This virtual conference attracted over seven hundred delegates who were given access to the virtual platform for up to three months after the conference ended. In this manner, they can access all recorded topics whenever they want,

even if they miss any sessions on the scheduled day. Following the conference's conclusion, all participants were provided with an e-certificate.

Twenty industrial partners contributed to the success of the conference. The industrial partners displayed their products and product information at the virtual booth. They can also respond to delegates' queries and questions about their products in real-time or offline, and they can track the number of visitors going to their e-booth.

Three best research awards and two best case report awards were selected at this virtual conference. Alex Bryne Bin Sikat of Hospital Queen Elizabeth II won first place in the research-based category for his paper "Pump Flow Reduction with Hypothermia Phases During Cardiopulmonary Bypass. Is it secure?". Dr Khaw Soon Keong of Sarawak Heart Centre took second place with his research, "Perioperative

Haematocrit Assessment in Adult Cardiac Surgery Patients with Cardiopulmonary Bypass in Sarawak Heart Center: A Retrospective Observational Study" and Farizan Abdul Ghaffar of Hospital Serdang took third place with her research, "Treatment Outcomes of Sildenafil in Pulmonary Hypertension with Valvular Heart Disease". For the case report category, Mohd Faizal Nizam of Hospital Raja Perempuan Zainab II won first place with his paper "Maternal with Large VSD and Eisenmenger Syndrome in Failure underwent General Anesthesia at Advanced Gestational Age" and Shahrane Shah Reza of Hospital Queen Elizabeth II took second place with the case report title "Teamwork on a Patient with Shared Airway: A Case Report".

This virtual conference offered five lucky draws for the delegates. The first prize was a Panasonic 55" 4K HDR Android TV, followed by a Huawei MateBook D15 15.6-inch Laptop, a Huawei MatePad



10.4-inch WiFi Android Table, an Electrolux Bagless Handstick Vacuum Cleaner, and a Samsung 32L Microwave Oven.

In conclusion, the Malaysian Cardiothoracic Anaesthesiology and Perfusion Society (MASCAP) successfully organised the virtual 11th Biennial Conference on Cardiopulmonary Bypass based on the number of participants, the up-to-date plenary and symposium topics, the number of participating industry partners, and the smoothness of the conference's virtual platform.



The organising committee members at the command centre in Le Meridien, Putrajaya



The organising committee members at work in the command centre

Perak Obstetric Anaesthesia Symposium 2022

by Dr Wan Ahmad Hafizi Wan Ahmad Junaidi, Dr Chan See Yun

Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia

The Department of Anaesthesia and Intensive Care, Hospital Raja Permaisuri Bainun (HRPB), Ipoh, in collaboration with the Persatuan Obstetrik Anestesia Malaysia (POAM), the Malaysian Society of Anaesthesiologists and the College of Anaesthesiologists successfully conducted the Perak Obstetric Anaesthesia Symposium (POAS) 2022 on the 1st and 2nd July 2022 in Auditorium Ambulatory Care Centre HRPB. The event was officiated by Dr Mustafa Shawal bin Safian, Deputy Director of HRPB, and was attended by 109 doctors and paramedics from the whole country including Sabah and Sarawak. This was the first obstetric symposium conducted physically post-pandemic and the first to be held in Ipoh, Perak.

The main objectives of the symposium were to discuss recent updates related to obstetric anaesthesia and labour analgesia, to highlight the ongoing issues regarding obstetric haemorrhage and embolism, as well as to expose the participants to complex medical



Symposium officiated by Dr Mustafa Shawal accompanied by from left Dr Rawiyah, Dr Usha Nair (HOD HRPB) and Dr Chan See Yun (organizing chairperson of Perak Obstetric Anaesthesia Symposium)

conditions among parturients including those with cardiac diseases, intracranial pathology and severe COVID-19 pneumonia. This two-day programme was filled with informative lectures, an interactive forum and fruitful discussions

between the esteemed speakers and participants.

All distinguished speakers were specially invited from POAM and are well-known experts in managing highly complex obstetric anaesthesia cases. Among them were Dr Norliza binti Mohd Nor from Hospital Selayang, Dr Chan See Yun from HRPB, Dr Nora Azura binti Dintan from Hospital Tunku Azizah, Dr Mohd Zaini bin Abu Bakar from Hospital Tengku Ampuan Afzan Kuantan, Dr Azarina binti Zakaria from Hospital Sultan Ismail Johor, Dr Nazuha binti Abdul Majid from Hospital Sultanah Bahiyah Alor Setar. Dr Chin Ji Zhang, an Intensive Care (ICU) fellow from HRPB was specially invited to enlighten the participants on the ICU management of a parturient with COVID-19 pneumonia.

Other highlighted topics include Integration of Acupuncture in Obstetric Anaesthesia, Perioperative Cardiac



Speakers and POAM members from left Dr Nazuha, Dr Asla, Dr Chan, Dr Nora, Dr Thohiroh, Dr Azarina, Dr Zaini, Dr Norliza

Output Monitoring in Parturients with Cardiac Disease and Neuraxial Anaesthesia in Parturients with Intracranial Pathology.

Besides that, participants also had an opportunity to participate in the interesting Kahoot quiz sessions at the end of each slot. There were eight Kahoot quizzes prepared during this symposium and ten overall top scorers were awarded special prizes at the end of the symposium.

The event was concluded at 12.00 pm on the 2nd July 2022, with positive feedback from almost all participants - they gained priceless exposure and beneficial practical knowledge from all lectures and discussions, achieved great satisfaction with the hospitality provided

by the host and mentioned that it was a well-organized course with seamless online experience and highly-responsive committee members. E-certificates, e-receipts and photos were emailed to all participants after the symposium.

Overall, this programme was a success and we hope that it will continue to become an annual event for anaesthetic healthcare workers dealing with the obstetric population.



Speakers, committee members and participants



by Dr Sivaraj Chandran, Dr Muhammad Nur Amin bin Abd Rahman
Hospital Tengku Ampuan Afzan, Kuantan, Malaysia

After successfully organising the National level 14th Paediatric Anaesthesia & Analgesia Workshop Kuantan 2022 (PAAW 2022), the Department of Anaesthesiology and Intensive Care Unit of Hospital Tengku Ampuan Afzan (HTAA) Kuantan, together with Jabatan Kesihatan Negeri Pahang (JKNP) and Kelab Bius Kuantan (KBK) has embarked upon the journey of organizing another successful event; the Pahang Anaesthesia Update 2022 (PAU 2022) on 26th and 27th August 2022. This is usually an annual event organised by the Department of Anaesthesiology, HTAA, Kuantan in collaboration with Jabatan Kesihatan Negeri Pahang (JKNP) aimed to educate and increase knowledge regarding the latest updates in anaesthesia for doctors and paramedic staff working in the state of Pahang.

This one-and-a-half-day course was held in the Auditorium of ACC, Hospital Tengku Ampuan Afzan, Kuantan and consisted of a series of lectures and updates on key topics related to the practice of anaesthesia and intensive care.

The opening ceremony was officiated by Dr Rahimah binti Ibrahim, Hospital Director of HTAA. She congratulated the organizing committee of Pahang Anaesthesia Update 2022 led by Dr Mohd Irwan bin Mohd Rasidi for their dedicated effort and emphasized the increasingly important role played by anaesthesiologists in managing patients, especially during the COVID-19 pandemic. She also extended her appreciation to the staff of the

Department of Anaesthesia & Intensive Care, HTAA, Kuantan for their continuous efforts towards educating and sharing knowledge by organizing various courses, workshops, and skills training sessions. This would definitely help to improve the quality of healthcare services. The opening ceremony was also attended by Dr Wan Satifah binti Wan Ngah, Senior Consultant Anaesthesiologists & Head of Service for KKM Anaesthesia Services for





the state of Pahang, and Dr Wan Marzuki bin Wan Ramli, Consultant Anaesthesiologist & Head of Department of Anaesthesiology and Intensive Care Unit, Hospital Tengku Ampuan Afzan (HTAA), Kuantan.

Our respected speakers of Pahang Anaesthesia Update 2022 consisted of:

1. Dr Muhammad Zihni bin Abdullah
Consultant Intensivists, HTAA
2. Dr Mohd Zaini bin Abu Bakar,
Consultant Obstetric
Anaesthesiologists, HTAA
3. Dr Sivaraj Chandran
Consultant Paediatric
Anaesthesiologists, HTAA
4. Associate Professor Dr Abdul Hadi bin Mohamed
Anaesthesiologist (Pain
Management) Kulliyah of Medicine,
University Islam Antarabangsa (UIA)
5. Dr Hasniza binti Ahmad Zakaria
Anaesthesiologists & TOP team
coordinator, HTAA
6. Dr Hafizah binti Mohamed
Anaesthesiologist & ACLS
coordinator, HTAA
7. Dr Sebastian Sundaraj
Anaesthesiologist, HTAA
8. Assistant Professor Dr Mohd
Nizamuddin bin Ismail
Anaesthesiologists, Kulliyah of
Medicine, University Islam
Antarabangsa (UIA)
9. Dr Zayuah binti Mat Sulaiman
Anaesthesiologists, Hospital Sultan
Ahmad Shah (HOSHAS), Temerloh,
Pahang



10. Dr Kavita a/p Sugumaran
Radiologist, HTAA
11. Dr Alia Nadhirah binti Hj Ahmad
Fakhri
Infection Control Unit, HTAA
12. Mrs Lee Yee Lin
ICU Pharmacist, HTAA
13. Matron Normila binti Ngadiman
HTAA
14. SN Norhasnina binti Mohd Noor
HTAA

A wide range of good topics related to anaesthesia and ICU practice were presented during this series of lectures.

Among the highlights were "Updates in Obstetric Anaesthesia" by Dr Mohd Zaini bin Abu Bakar, "Paediatric Emergency & Crisis in OT - What to do?" by Dr Sivaraj Chandran, "Anaesthesia for Obese Patients" by Dr Sebastian Sundaraj, "Overview of Surviving Sepsis Campaign 2021" by Dr Muhammad Zihni bin Abdullah, "Advanced Life Support - Updates" by Dr Hafizah binti Mohamed, "Common ICU Radiological Findings" by Dr Kavita Sugumaran, "HTAA experience in Organ Donation" by Dr Hasniza binti Ahmad Zakaria.

Our participants consisted of consultants, specialists, medical officers, and paramedic staff from all over the state of Pahang. The course ended with a speech by Dr Wan Marzuki bin Wan Ramli, Head of the Department of Anaesthesiology and Intensive Care Unit, HTAA, Kuantan during the closing ceremony.

In summary, we would like to express our deepest gratitude to all our distinguished speakers and committee members for their tremendous effort and support in making this event a success.





Cadaver Regional Anaesthesia Workshop 2022 (in conjunction with EmRAS 2022)

by Dr Yeoh Jie Cong¹, Dr Khairul Idzam Muslim²

¹Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

²Hospital Ampang, Selangor, Malaysia



“Hello, we would like to post a case for below knee amputation for a septic patient with necrotizing fasciitis, with an underlying triple vessel disease, end-stage renal failure who defaulted his last haemodialysis, with a white cell of 45k...”

Does that ring a bell to you? I am sure it did, for every anaesthesiologist or budding trainee, this is a must-go-through process. To date, there is no definite evidence to support the choice of anaesthetic techniques for high-risk cases like this. However, there is a technique that many of us would have thought of especially for cases like this - REGIONAL ANAESTHESIA. Yes! Regional Anaesthesia (RA) or commonly known as “blocks”. At this point, many of us will be thinking along the lines of “But I have not done one before”, “I have only read about it”, or “I have only assisted some!” Again, it sounds familiar, doesn't it?

See one, do one, teach one - A traditional yet applicable concept in the medical profession, which was first introduced by W.S Halstead of John Hopkins hospital. Unfortunately, this quote is not applicable in the field of RA as we need practice and experience to

master this skill. In order to provide safe yet effective RA for our patients, education and training are paramount. There are multiple ways to educate and guide practitioners in RA, for instance free and easily accessible videos, studying anatomy books, hands-on training sessions under direct supervision or cadaveric workshops. The most realistic and most similar to actual patients are cadavers, in which a deep cross-section of the human anatomy (e.g. nerves, muscle layers, fascias) and a live demonstration of local anaesthetic agent spread along a plane or even a demonstration of complication can be seen (e.g. accidental intra-neural injection, tactile/visual feedback when injecting into an undesired plane).

This cadaveric workshop was the first of its kind organised by HASAIC (Hospital

Ampang Society of Anaesthesia and Intensive Care) post-COVID-19 pandemic and was the third of its kind in Malaysia. The first was the National Regional Anaesthesia Symposium Malaysia in conjunction with Regional Anaesthesia ASIA in 2017, Penang; while the second was held in 2018, at Universiti Malaya. This idea was initiated as a collaborative effort with the committee of the Emergency Regional Anaesthesia Symposium (EmRAS). EmRAS was held on the 4th - 5th July 2022 for the main event, followed by two hands-on training sessions in Hospital Ampang (6th July 2022) and Hospital Kuala Lumpur General Operating Theatres (8th July 2022). The Cadaver Regional Anaesthesia Workshop was held on the 10th August 2022, with the support of the Academy for Silent Mentor (AFSM) at Xiao En Centre, Cheras, Kuala Lumpur.

Distribution of Participants (Location)



Figure 1

The registration was opened in early May 2022 and there were still enquiries about the course until the day of the workshop. A total of 54 participants registered for this cadaveric workshop (Figure 1.0), ranging from young medical officers to consultant physicians (both anaesthesiologists and emergency physicians). The workshop was divided into two big groups, where one group was in the cadaveric session and another group was in the simulated model demonstration of sono-anatomy. Each group was further divided into three core sections which were the upper limb, lower limb and truncal. The aim of this cadaveric workshop was to allow the participants to appreciate the important sono-anatomy structures and to practice their needling techniques without the fear of causing unnecessary complications. This will increase their confidence in acquiring the skills.

The key facilitators of this workshop were:

1. Dr Mohd Sany - Head of Department (Hospital Ampang), who had attended *ESRA Cadaver Workshop* in Siriraj Hospital, Bangkok, Thailand.

2. Dr Amiruddin - Director of Regional Anaesthesia Subspecialty Service Malaysia, who had attended *ESRA Cadaver Workshop* in Dresden, Germany.

3. Dr Iskandar Khalid - Fellow of Regional Anaesthesiologist (UKM), who had attended *Guy's Hospital, London (UK)* and *Aristotle University of Thessaloniki (Greece) Cadaver Regional Anaesthesia Workshop*.

4. Dr Khairul Idzam Muslim - Regional Anaesthesiologist in Hospital Ampang.

5. Dr Wan Nabilah Nik Nabil - Fellow of Regional Anaesthesiology in Hospital Kuala Lumpur.

6. Dr Farhana Katiman - Fellow of Regional Anaesthesiology in Hospital Kuala Lumpur.

This event started at 8.45am with a short session by the Academy for Silent Mentor, where the team prepared a short presentation of our silent mentors of the day to show their life journey and

to express gratitude towards them. It was a meaningful yet heartfelt session with the participants.



After the presentation, the groups were divided into two big groups (Simulated Model & Cadaver Station) and began their session. Each session lasted about 45 minutes. In between the sessions, enthusiastic trainers and participants participated in serious discussions where additional tips and tricks were shared by the facilitators. Some feedbacks we received were that the time allocation

was too short and they hoped that more time would be allowed in each session.

The main highlight of this cadaver workshop was of course our fellow Silent Mentors. We acquired three Silent Mentors for this workshop to ensure adequate time and exposure for our fellow participants. A small gratitude session was held in the demonstration

room prior to the hands-on session as a respect to the Silent Mentors. The facilitators first demonstrated the sono-anatomy on the Silent Mentors then guided the participants with their needling techniques. All the participants had the opportunity to perform ultrasound-guided needling and local anaesthetic injections during this session.



This workshop officially ended at 2.00 pm with lunch provided and the participants were reminded that an e-certificate will be issued to them once they completed the feedback form. In the feedback form, most of the participants were happy and satisfied with the content of the workshop; and the second most common feedback was that there was inadequate time allocated/smaller groups were suggested for future workshops. All feedback were recorded and will be taken into consideration for the upcoming similar workshops. Overall, this Cadaver Regional Anaesthesia Workshop in conjunction with EmRAS

2022 was a great success and we strive to provide more quality training in the coming future for the best of our patients.

We would also like to express our gratitude and appreciation to the Academy for Silent Mentor, Professor Dr Chin Kin Fah, and his team for supporting and assisting us in this workshop. Dr Mohd Sany also attended the Ceremony of Gratitude on the 14th August 2022 (by AFSM Malaysia) to share with the family members of the Silent Mentors on their contribution to the field of medical education and training.





*The team who made this Cadaver Regional Anaesthesia Workshop a success.
From Left to Right: Dr Suriyati, Dr Wan Nabilah, Dr Amiruddin, Dr Mohd Sany,
Dr Khairul, Dr Iskandar, Dr Yeoh JC, Dr Farheen, Dr Farhana*

The following are some of the highlights of the workshops:



Dr Mohd Sany explaining on how to infiltrate the LA around the nerve



Dr Amiruddin demonstrating on LA injection on the cadavers



Dr Iskandar guiding participants on how to manoeuvre the needle with ultrasound



Dr Khairul demonstrating the lower limb sono-anatomy essential for an anaesthesiologist



Full concentration while performing Ultrasound guided RA



Participants assisting in giving LA injection and looking at the spread

Pain Free Campaign Hospital Seberang Jaya 2022

“TOGETHER, WE OVERCOME PAIN”

by Dr Chuah Pea Ching, Dr Lee Fenky

Hospital Seberang Jaya, Pulau Pinang, Malaysia

“Every pain gives a lesson and every lesson changes a person”

In our line of work, we invariably encounter pain in its multiple forms and effects. Pain remains one of the main complaints why patients are admitted to the hospital and are also one of the reasons why patients fear going to the hospital. It could be caused by surgery, other painful procedures or previous unpleasant experiences during their hospitalisation.

Realising this, the Pain Free Committee Hospital Seberang Jaya organised a 'Pain Free Campaign' from 18th to 22nd July 2022. The event was held at the hospital foyer, involving various representatives from our Anaesthesia team, Surgical directorate (Surgery, Obstetrics & Gynaecology, Orthopaedics, ENT, Oral & Maxillofacial), Medical directorate (Medical, Paediatrics,

Emergency Medicine), Allied Health practitioners (Pharmacists, Physiotherapists, Occupational Health Therapists), Nursing and Medical Assistant team.

We believe that only by gaining knowledge, one becomes a learned person. Thus, we aimed to empower the patients and families with sufficient knowledge regarding common generally painful conditions and management strategies to alleviate pain. This is the reason behind our tagline, “Together, we overcome pain”.

This one-week campaign comprised a series of activities and updates. We started a month earlier with an inter-departmental poster competition curated to create educational posters for the public. Many surprising and budding talents were unearthed during this period. We also conducted a colouring contest for paediatric in-patients as we believe the importance of this awareness and knowledge should be ingrained from young. Prizes were awarded to lucky and joyful children and parents during the campaign week.

The opening ceremony was graced by several guests of honour, namely

our Hospital Deputy Medical Director, Dr Mohammad Nazmi bin Mohamad Hussain and visiting Pain Consultant and Anaesthesiologist, from Hospital Pulau Pinang, Datin Dr Usha Rajah; both of them officiated the event in the presence of various department representatives. Subsequently, several judges reviewed and finally presented the first prize poster to our creative Anaesthesia MO, Dr Peggy Chan.

During the week-long campaign, various teams promoted their department's pain-free services in the form of poster displays, information brochures or aids, and equipment. Online quizzes and gifts were given to encourage patrons to visit the booths.

At the end of the event, visitors were asked to provide their feedback via Google form. From our data analysis, most visitors were satisfied with the pain services rendered by Hospital Seberang Jaya and had a wonderful experience while receiving treatment from the hospital.

In conclusion, “Pain Free Campaign HSJ 2022” was a successful event. We hope to organise more similar events in the future to increase awareness among the public. In reference to our opening quote, we aspire to educate and be part of the lesson and knowledge that the person can refer to.



Pain Medicine Anatomy Workshop 2022

by Dr Delima Radzwa Hasan

Hospital Tengku Ampuan Rahimah, Klang, Malaysia

"One source, multiple sites of pain. One site, multiple sources of pain"
(Anonymous)

This is the dilemma that pain physicians face on a daily basis. Applying the knowledge of human anatomy to pain medicine is vital in identifying the source of pain. For many of us, the last anatomy lesson was at least fifteen years ago. Therefore, the ideation of an anatomy workshop for pain medicine trainees and specialists lighted up in early 2021 and was further conceptualised early this year after the hurricane of the COVID-19 pandemic.

After careful planning, the MOH Pain Medicine Subspecialty Services organised the first ever Pain Medicine Anatomy Workshop at Colmar Tropicale, Bukit Tinggi, Pahang from 12th to 14th September 2022. A total of thirteen pain medicine trainees and five pain medicine consultants participated in the workshop. The five anatomy gurus who supervised the workshop were Dr Muralitharan A/L Perumal, Dr Awisul-Islah Ghazali, Dr Ahmad Afifi Mohd Arshad, Dr Aldred Soo Cheng Wei and Dr Law Yen Shuang.

The workshop began with an opening speech by Dr Muralitharan, the chairperson of the organising committee. The workshop was structured to deliver comprehensive anatomy for head and neck, thorax, lumbar, abdomen, pelvis, and upper & lower extremities. For each topic presented, the corresponding 3D anatomy, the fluoroscopic and the live ultrasound images were projected simultaneously on three screens, allowing the participants to be fully engrossed in the anatomical structures. The first day of the workshop ran

smoothly, covering the head and neck and thorax regions.

Waking up in a French-themed village with a cup of coffee paired with fresh buttery croissant was the perfect kick-start for the second day of the workshop. Participants explored the abdomen and pelvis, followed by the lumbar region. The lumbar region was one of the participants' favourite topics as most patients who presented to the pain management clinics had chronic low back pain. Interventional procedures commonly performed for low back pain include transforaminal epidural steroid injection, facet joints and middle branch block and pulsed radiofrequency. After an intense day, participants were rewarded with the king of all fruits, the *durian*. However, they had to be on guard while feasting on the sumptuous *Musang King* due to uninvited guests, the monkeys!



The cool breeze, chirping sounds of birds and screeching voices of monkeys welcomed us to Colmar Tropicale



As we weaved up into Bukit Tinggi, our lungs were saturated with fresh oxygen from the surrounding forests



Horse-shoe-shaped classroom arrangement with the presenter sitting on a low stool to ensure unobstructed view for the audience



Three-screen projections: 3D anatomy (right), slide presentation with fluoroscopic image (middle) and live ultrasound image (left)



Another teaching tool: the supermodels with the ultrasound machine on standby



Durian fever! Away from the monkeys.



Participants were well fed and happy



Plenty of food to go around

On the last day of the workshop, participants explored upper and lower extremities which were less daunting for those who routinely performed regional blocks for surgery. Instead of routine peripheral nerve blocks, the workshop focused on anatomy and injection techniques for chronic pain interventions such as joints and connective tissue injections. Participants also learned to correlate anatomy knowledge with sonoanatomy via hands-on ultrasound guidance from the supervisors.



Teaching tool: The skeletons

Overall, the participants were satisfied with the workshop's content, arrangement and flow and suggested more hands-on sessions for future workshops. We want to thank the Organising Committee and the supervisors for making this workshop a success. Special thanks to three medical officers from Anaesthesiology & Intensive Care Department, HTAR Klang for volunteering as models. We hope similar workshops will be organised to equip aspiring pain medicine specialists with the knowledge and skills required to care for the patients.



Till next time!

Neurocritical Care Conference 2022

by Dr Abigail Dayang Ridu, Dr Chan Weng Ken, Dr Peter Tan
Hospital Umum Sarawak, Sarawak, Malaysia



Ever since the COVID-19 pandemic declaration by the World Health Organization in 2020, digital technology has revolutionised a significant part of our lifestyle, including medical education. The rapid assimilation of technology in medical education has enabled the seamless continuation of education via online conferences for healthcare professionals to stay well-informed with the current updates. Although the digital transformation of the medical field has contributed to the development of clinical management, it has also added to the complexity of managing critically ill patients.

To meet the increasing demand for complex critically ill patients with neurological conditions in our region, Malaysian Society of Neuroanaesthesiology and Neurocritical Care held its inaugural conference, NCC 2022, virtually on 1st to 3rd July 2022. We invited both local and internationally renowned speakers in their respective fields related to neurocritical care to exchange ideas and share their experiences. We hope this conference has strengthened the quality of neurocritical care for the adult and paediatric population to drive the best possible outcomes.

It was not an easy feat to handle such an enormous event. We were fortunate to be able to engage Kenes MP Asia, a professional conference organiser, to ease the technical aspects of this conference. We also had the help of The Association of Staffs of Anaesthesiology Sarawak General Hospital (PEKA-HUS) to manage the educational elements. We gathered 79 distinguished speakers from local and international committees, including 19 societies worldwide. Social media platforms (Twitter, Facebook and

Instagram) were set up to further promote NCC to a broader audience. A total of 3105 registrations were received from 62 nationalities worldwide for this event.

A pre-conference event preceded NCC on 28th May 2022: "A virtual academic session with the Presidents of Asian Society for Neuroanesthesia and Critical Care, Neurocritical Care Society, SNACC, and World Federation of Societies of Anesthesiologists (WFSA)". This event was a webinar delivered by respective honourable presidents of each society, namely, Associate Professor Dr Kwek Tong Kiat, Professor Dr Panayiotis Varelas, Professor Dr Chanannait Paisansathan, Professor (Emeritus) Dr Adrian Gelb and moderated by Associate Professor Dr

Wan Mohd Nazaruddin Bin Wan Hassan.

On the first day of NCC, we kicked off the highly anticipated conference with a series of problem-based learning discussions for both the adult and paediatric tracks. This was followed by Plenary One by Dr Wong Yulin on 'Managing neurological emergencies during the coronavirus pandemic'. We had the honour of having Dr Rob Hendry and Dr Katie Grant share controversial and engaging case discussions on 'Medicolegal and ethical perspectives of care in the ITU' as a sponsored symposium by the Medical Protection Society. Dr Erik Weber Jensen of Fresenius Kabi also delivered an insightful symposium on 'Processed EEG and ICU sedation/postoperative cognitive dysfunction and delirium'.

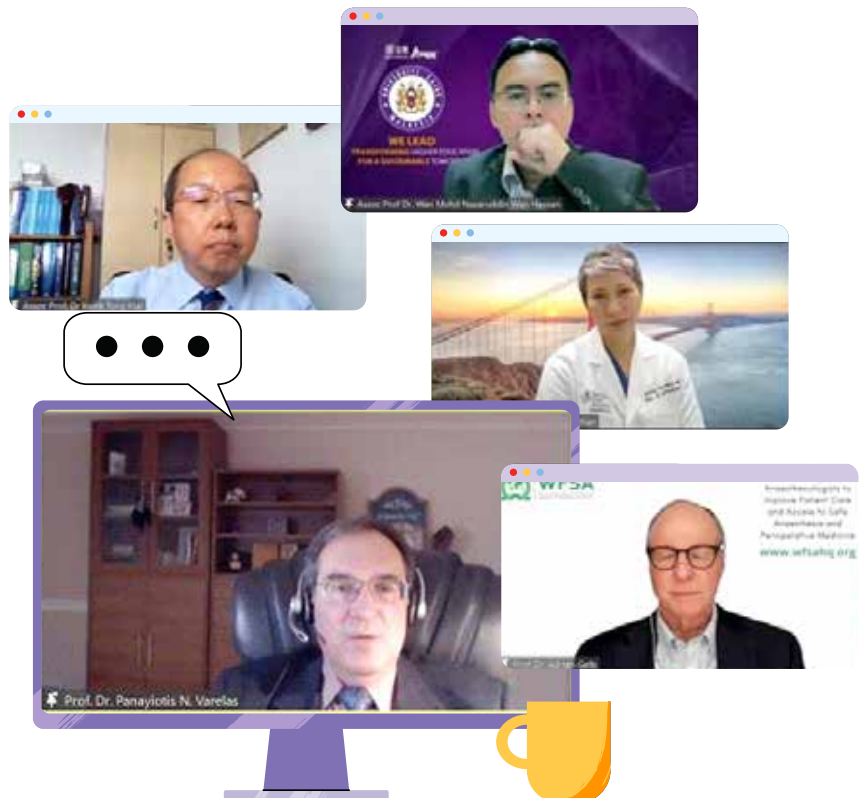


Figure 1: Pre-conference event 'A virtual academic session with the Presidents of Asian Society for Neuroanesthesia and Critical Care, Neurocritical Care Society, Society of Neuroscience in Anesthesiology and Critical Care, and World Federation of Societies of Anesthesiologists' on May 28, 2022

The second day of NCC started with plenaries by Professor Dr Jose Ignacio Suarez and Associate Professor Dr Alana Flexman on 'Quality and outcomes in neurocritical care: what matters?' and 'Translating perioperative neuroscience research into practice: pathways and pitfalls'. These timely lectures gave us better perspectives on research areas of neurocritical care that are needed and that can be done in our region. This was followed with a symposium on "Nursing and Rehabilitation" in the ICU, especially targeting support teams such as nurses and physiotherapists. We ended the second day of NCC with a lecture by Professor Dr Girija Prasad Rath on the 'Postoperative care of pediatric neurosurgical patients'.

The final day of NCC opened with two interesting lectures - 'Paediatric traumatic brain injury: not just little adult' and 'Perioperative sleep disturbances' - by Professor Dr Robert Tasker and Professor Dr Deepak Sharma, respectively. NCC 2022 ended with the announcement of the best oral and poster presentations and fundraising for The Society for Critically Sick Children (SOS Kids) Sarawak, an organisation to help critically sick children and their families. Dr Christopher Sum from The University of Hong Kong won the best oral presentation award for his work on 'Prediction and Management of Neurological Complications in Patients on Extracorporeal Membrane Oxygenation: The Neurointensivist's Perspective'. Dr Loo Wing Hoh from Universiti Kebangsaan Malaysia won the best e-poster on the topic of

'Outcome of Patients with Traumatic Brain Injury Admitted to ICU UKMMC: A 5-Year Retrospective Study.'

As we look back, organising this conference was no small feat. Ten symposia with eleven plenaries and workshops were designed for this three full-day conference with 2120 minutes of running time. Throughout these three days, all the topics presented broadened our vision of the future of neurocritical care and the advancement of neurosciences. Hopefully, together, we have moved further forward than we are at present. We hope that you and many other colleagues can join us physically as we look ahead to our next NCC on 7th to 9th July 2023 at the Borneo Convention Centre, Kuching, Malaysia.

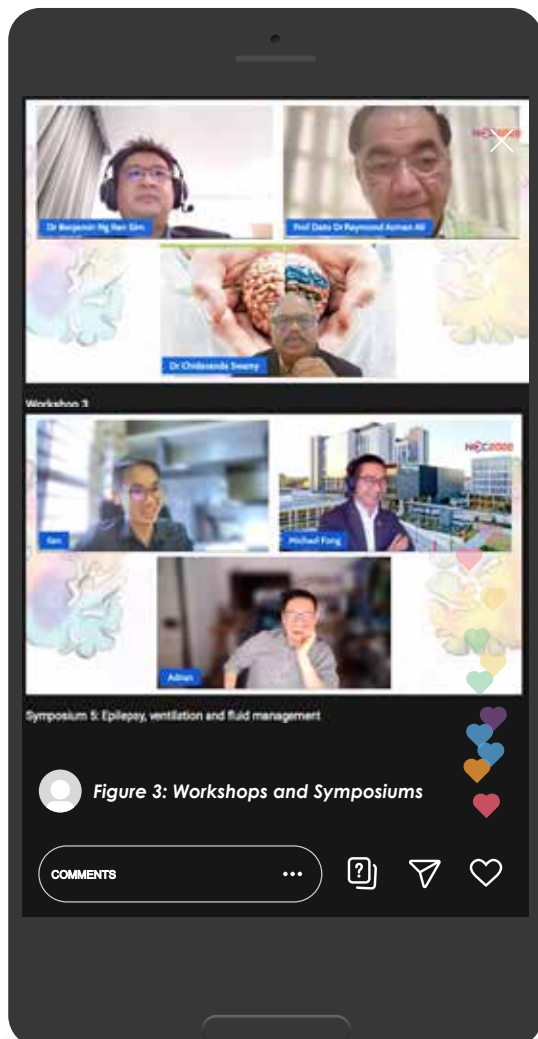


Figure 2: Problem-Based Learning Discussion

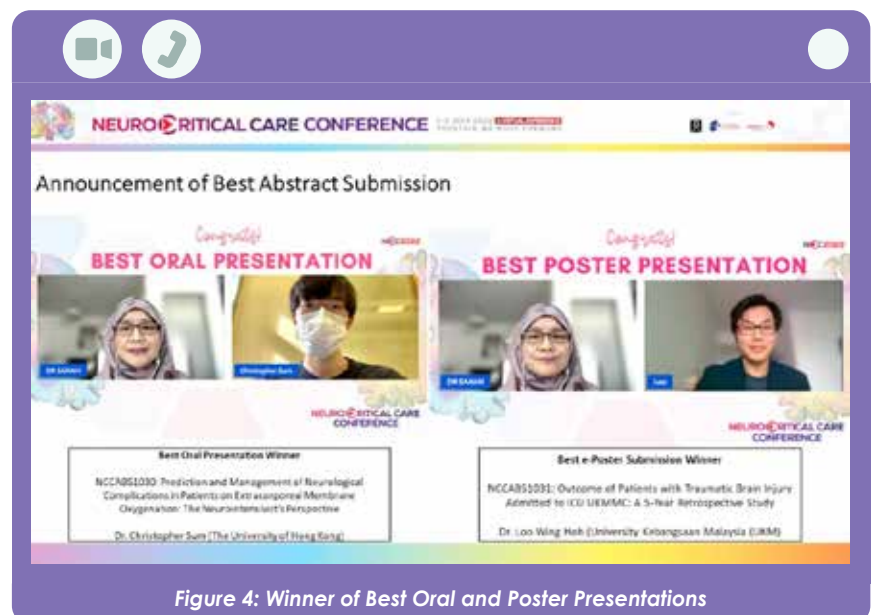


Figure 4: Winner of Best Oral and Poster Presentations

ANAESTHESIOLOGISTS CREATES

Never Fail Fluffy Pancakes

The Chef in Black

INGREDIENTS

1 cup plain flour
1 cup milk
1 egg
2 tablespoon butter / cooking oil
2 tablespoon sugar
1 teaspoon baking powder
1/2 teaspoon bicarbonate
1 teaspoon vanilla essence

METHOD

Mix the flour with milk, egg and the rest of the ingredients in a mixing bowl. Mix everything well and even with a spatula. You can use either melted butter or cooking oil preferably olive oil. The end result would have a watery but thick consistency. Heat up the pan with medium heat. Melt some butter or oil on the pan. With a ladle, drop a dollop of the batter on the pan till it forms a circle on the pan. Wait till you see bubbles forming on the surface. At this point, you could add some fruits like blueberries, strawberries or bananas. Then flip the pancake and cook till brown on the underside for about a minute before serving. Serve with some fruits with butter and maple syrup. You can use the same batter recipe to make waffles. You just need a waffle maker...Enjoy.




ANAESTHESIOLOGISTS CREATES



An old timey nurse! Surprisingly hard to find pictures of the oldest nursing uniforms used in our medical services. A salute to all our wonderful nursing colleagues who help us provide safe medications to our day to day work

For more sketches check out instagram

 @paulicalart

ANAESTHESIOLOGISTS CREATES

by Dr Abu

#SAFE MED



Welcoming the Anaesthesiologists - NOVEMBER 2022

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Mohd Fauzi bin Ibrahim
Mohd Razif bin Mohamad

Noor Liyana binti Mohamad Saad
Soo Ki Yang

Wong Shee Ven
Allison Yeoh Sin Yi

UNIVERSITI KEBANGSAAN MALAYSIA

Fatima binti Ahmad Katran
Lim Meng Huey
Loo Wing Hoh
Low Ren Geng
Ng Boon Hui

Nor Haslinda binti Zainuddi
Norhafiza binti Mat Arif
Nur Izzati binti Azmi
Nurliyana Nazri
Nurul Najwa binti Mohd Noor

Puteri Dila Shazrina binti Suhamdan
Wilson Anak Matthew Rona
Ignatius Wong Hsun-Hong
Yamminidevi A/P Loganathan

UNIVERSITI MALAYA

Abu Hurairah bin Abu Samah
Ahmad Fariz bin Elias
Amir Khairi bin Md Supar
Koh Kian Chuan
Ili Syazana binti Jamal Azmi
Andrew Ling Jing Seng
Maya Mardiana binti Nazlan
Muhammad Afif bin Jamaludin

Nabilah binti Abdul Ghani
Noor Ain binti A Rahim
Noor Azwani binti Mohd Omar
Nur Aini binti Naser
Nur Haryanti Izumi binti Suhaimi
Nur Syairah binti Ishak
Nurulain binti Ab Rahman
Puteri Nurul Diyana binti Ahmad Ainuddin

Suzy Anak Belaja
Tengku Nurul Amirah binti Tengku Alim Shah
Vanitha A/P Gunaseekarani
Vinod Laxmikanth A/L Balasundra
Wong Chee Rong James
Yap Kai Sing
You Pei Xing

UNIVERSITI PUTRA MALAYSIA

Chang Yit Mei Vanessa
Jaishree Santhirasegaran
Muhammad Anwar bin Johari

Nitthya A/P Sukumar
Nor Husna binti Mohd Zuki
Nurbayani binti Inche Mat

Ooi Poh Ling
Tan Yiyong

UNIVERSITI SAINS MALAYSIA

Asyraf bin Abdul Samat
Dhivya A/P Rajasingam
Mohd Tarmimi bin Mustapha
Muhamad Rafiqi bin Hehsan

Nanthini A/P Ganapathy
Nurul 'Aifaa binti Mohd Azmi
Nurul Izzati binti Mohd Noor
Sadiah Naim Khan
Shubashini A/P Thevadass

Suki Bin Ismet
Umairah binti Esa
Yeap Han Jian
Zulaikha binti Zahir

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Day at the Hospital Al-Sultan Abdullah, UiTM, Puncak Alam, Selangor. It started with a 5km costume run, Battle of the Gas-Men (an Inter-hospital Telematch), and Beyond the Screen video challenge. The fun and educational celebration was officiated by YBhg Professor Datuk Ts Dr Hajah Roziah Mohd Janor, Vice-Chancellor of UiTM.

The CoA launched the first local Atlas on Sonoanatomy of the Lower Limb Blocks at this event. The Atlas was produced by the Regional Anaesthesia SIG led by its Convenor, Dr Azrin Mohd Azidin.

Anaesthesiology and Critical Care Postgraduate Programme

The CoA is the "academic arm" of anaesthesiologists in the country and is committed to upholding the highest ethical standards and professional competence of its members. We actively participated in the writing up of the National Curriculum for Anaesthesiology to ensure the harmonization between the National and Parallel Programme curriculum. We will continue to support the Universities and MOH particularly in all areas of training to ensure the quality of anaesthesiologists and critical care physicians and intensivists in this country will meet international standards.

There had been a massive change to the PP programme beginning September 2022 following the availability of scholarships for candidate pursuing this pathway. The PP training document, on the CoA website had been revised and updated accordingly. Training-the-trainers programme was conducted by the PP Subcommittee to brief all the Heads of Department of MOH regarding the changes with the programme. Following that a webinar to update the PP Anaesthesiology and Critical Care was organised by the MOH, the MSA and the CoA on 5th November 2022.

A brief virtual introductory meeting with the President of CAI, Prof George Shorten, and its CEO, on 15th September 2022 indicated that the CAI will be conducting their examination (viva/OSCE) face-to-face in Malaysia again, starting November 2023. We also discussed regarding the accreditation of the following hospitals as a future training centre for PP:

1. Hospital Raja Permaisuri Bainun, Ipoh, Perak
2. Hospital Tengku Ampuan Rahimah, Klang Selangor
3. Hospital Sungai Buloh, Selangor
4. Hospital Universiti Sains Malaysia, Kelantan
5. Hospital Queen Elizabeth II, Kota Kinabalu, Sabah

Guidelines and Recommendations

In our first Council meeting for the term 2022-2023, we have been planning to concentrate on issues of Professional Wellbeing and Anaesthesia Sustainability. We have also continued to update the COVID-19 guidelines. The latest update was on the Guidelines on Elective Surgery and Anaesthesia for Patients after COVID-19 Infection published on 13th September 2022.

Participation in International Congress

The MSA and the CoA participated in the 16th Asian Australasian Congress of Anaesthesiologists (AACA) held at the Coex, Seoul, Korea from 10th to 13th November 2022. As a continued effort to maintain and strengthen the relationship between our Malaysian and Korean societies, we contributed three speakers and three leaders to represent Malaysia at the Congress.

This year, Malaysia bid to host the AACA 2030 and we were lucky to have won it uncontested. At this Congress I was also elected as Asian Australasian Regional Section (AARS) Board Member for

2022-2026. I would like to extend our sincere appreciation for Dr Raveenthiran Rasiah who had been our representative for the last four years.

Continuing Professional Development Activities

The 1st Advanced Airway Workshop was organised by the Sibu Anaesthesiology Department in collaboration with the MSA and the CoA and MOH on 22nd October 2022 at the Rejang Hall Hospital Sibu. This is the CME conducted for the central zone of Sarawak.

The following are in the pipeline:

1. Simulation in Anaesthesiology Workshop - Jointly organised by Hospital Umum Sarawak and Sim Net Sarawak in collaboration with CoA on 26th to 27th November 2022 in Kuching Sarawak.
2. Anaesthesia Patient Safety Symposium (Virtual) - Advancing Anaesthesia Patient Safety Together, jointly organised by the Persatuan Kakitangan Anestesiologi Hospital Umum Sarawak and the MSA and the CoA in collaboration with Anaesthesia Patient Safety Foundation (APSF) and American Society of Anaesthesiologists (ASA) on 20th to 21st May 2023.
3. The 23rd ASEAN Congress of Anaesthesiologists 2023 In conjunction with the 98th Annual Scientific Meeting of the Royal College of Anaesthesiologists of Thailand - SMART Anesthesia, Critical Care and Pain the Medicine. - 1st to 3rd September 2023, Royal Orchid Sheraton Hotel, Bangkok, Thailand.

As we are heading towards the end of the year, having survived the GE-15, I would like to wish everyone Merry Christmas, Happy Holidays and Happy New Year.

Message from the **PRESIDENT OF THE COLLEGE OF ANAESTHESIOLOGISTS, AMM**

Professor Dr Marzida Mansor

CoA President's Message for Berita Anestesiologi November 2022

I am delighted to be writing this message again for the November 2022 issue, with Malaysians leading almost a normal life once again. Many important events have taken place in the last four months.

MSA/CoA Annual Scientific Congress or MyAnaesthesia 2022.

Our main event was the MSA/CoA Annual Scientific Congress or MyAnaesthesia 2022 that was held on 3rd to 5th August 2022 (Hybrid) at the Shangri-La Hotel, Kuala Lumpur. The Opening Ceremony was officiated by YBhg Datuk Dr Asmayani Khalib, Deputy Director-General (Medical), Ministry of Health Malaysia.

The theme for this year's ASC was "FOCUS - an abbreviation for "Forging Onwards to a Collaborative Unified Success". As anaesthesiologists' skills get increasingly specialized, collaboration as a practice becomes more important than ever. It has been shown that organizations that collaborate well are likely to be more financially successful, more culturally aligned, and have higher engagement rates.

With regards to collaboration and advocacy, the College of Anaesthesiologists joined the Malaysian Health Coalition in March 2020 when we realised that the health of our country depends on the unity among health professionals of all disciplines, in

addressing not only scientific but also political, commercial, and social determinants of health.

Moving forward, we hope that we will be equipped with networks and tools to enable us to conduct our own policy advocacy for our own organisation specific issues, in the future. To start with, we have recently issued a joint press statement with the MSA entitled "Anaesthesiology Fraternity Supports the Control of Tobacco Products and Smoking Bill 2022".

At this year's ASC, we launched the "Recommendations on Ultrasound Guided Venous Access". This recommendation was written mainly by the Ultrasound SIG led by its Convenor, Dr Hasmizy Muhammad. It is intended to improve the quality and safety of vascular access procedures. It is concise, evidence-based and include recommendations on training and competency.

As patient safety is always close to our heart, we also launched the Update of recommendations on "Patient Safety and Minimal Standards of Monitoring during Anaesthesia and Recovery". This is the 5th edition; the 4th edition was last reviewed in 2013.

Apart from the above activities, the CoA continued to oversee the training of the Parallel Pathway (PP) Programme, in collaboration with the College of Anaesthesiologists of Ireland (FCAI). One of the Pre-Congress Workshops at the ASC, include a training-the-trainers workshop on "Workplace-Based

Assessments". Direct Observation of Procedural Skills (DOPS), Mini-Clinical Evaluation Exercise (mini-CEX) and Case-based discussion (CbD) are some of the most commonly used methods of workplace-based assessments that will be included in the National Curriculum and were taught to the participants.

Since its inception in 2012, three candidates had graduated from the PP programme with FCAI and CCT, that is registrable with the National Specialist Registry. The inaugural Conferment Ceremony of the PP Completion of Specialist Training Certificate graced by Y Bhg Tan Sri Dato' Seri Dr Noor Hisham Abdullah, Director-General of Health Malaysia, as the guest of honour was held on 6th August 2022 in conjunction with the ASC.

I would like to thank the Organising Committee for their hard work and creativity to make this congress a success. My special thanks also to the Scientific Committee that is led by Dato' Dr Yong Chow Yen, partners from the biomedical industry, the secretariat, the virtual platform provider and finally to all participants of the Congress.

National Anaesthesia Day Celebration

World Anaesthesia Day is celebrated annually on 16th October. The theme this year was "Medication Safety" highlighting the expertise and leadership of the global anaesthesia community in reducing medication errors and improving patient safety practices. In Malaysia, this year, it was celebrated as the National Anaesthesia



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