VOLUME 32 • ISSUE 2 • JULY 2022

BERITA ANESTESIOLOGI

MALAYSIAN SOCIETY OF ANAESTHESIOLOGISTS

COLLEGE OF ANAESTHESIOLOGISTS AMM

MASTERS OF THE INTRAVENOUS ARTS

Message from the President of the MSA

Professor Dr Ina Ismiarti Shariffuddin

Dear Esteemed Society Members,

Assalamualaikum and Selamat Sejahtera to all. Alhamdulillah, since my last message, the COVID-19 cases in Malaysia have reduced and SOPs have been eased. Borders have been reopened and people can now travel. We are a bit more tech-savvy due to the COVID-19 pandemic and with the progress of global digitization. Despite that, many are still adapting to these new norms. Activities now can be held physically or via hybrid format. Therefore, I am pleased to inform members of our past, the upcoming activities by MSA.

Malaysian Society of Anaesthesiologists and College of Anaesthesiologists, Annual Scientific Congress 2022

Members are cordially invited to attend this premier meeting held from 4th to 7th August 2022. The theme is "My Anaesthesia 2022: FOCUS - Forging Onwards to a Collaborative Unified Success". This will be a hybrid meeting, but we encourage members to attend physically after two years of attending virtually. It is an excellent opportunity for us to rekindle our friendship after being in isolation since the start of the pandemic. With 41 sponsors and with all booths sold out, we anticipate that it will be a great event. We expect around 800 physical and virtual delegates (local and international) to attend. We received 74 abstract posters and the shortlisted abstracts will compete for the MSA Young Investigator Award, MSA Award, and e-poster prizes. We would also like to invite members to join the pre-congress Airway, Simulation, Transoesophageal Echocardiogram and Workplace-Based Assessment workshops.

MSA and CoA under the KITE Series

Our programme for continuous medical education has been successfully conducted for members as below.

Past Activities

- Webinar on the Introduction and Requirements to the Specialty Training Via the Parallel Pathway Programme was held on 5th March 2022.
- Medicolegal Issues and the Anaesthesiologist held on 26th March 2022
- Anaesthesiology Updates 2022 held on 24th April 2022
- Evidence-Based Medicine Workshop held on 1st June 2022
- Difficult Conversation Open Disclosure following Adverse Events on 21st May 2022
- Cardiopulmonary Bypass for the Anaesthesiologists on 11th June 2022

K Inbasegaran Research Fund

The MSA Research Committee executes the administration of this fund. The purpose of this fund is to support, partially or fully, one or more research projects in the study of anaesthesia, intensive care medicine, pain medicine, and related sciences and branches of medicine. This year, the successful applicants for the K Inbasegaran Research Fund went to Associate Professor Dr W Mohd Nazaruddin bin W Hassan from USM, Dr Nabilah Abdul Ghani from UM, and Dr Kevin Ng WS from UM. They have received RM4000, RM3000 and RM3000 respectively. The MSA is encouraging our budding anaesthetists to participate in research and contribute to the new body of knowledge in the field of anaesthesia, intensive care medicine and pain medicine. Therefore, starting this year, we have decided to increase the amount of the fund to RM20,000 per year. The application for this fund opens on 1st June and closes on 30th September each year. The successful applicants will be announced in November of the same year.

Malaysian Journal of Anaesthesiology (MyJA)

We are delighted to update members that MyJA is on track to be published in August 2022. We have received many submissions, including interest in publishing with us from international authors. Although submissions for the current edition have closed, we encourage members to continue to submit case reports and case series, original articles, and letters to the editor for subsequent publication. Please use the submissions link to submit your articles on the MyJA website, https://www.myja.pub. If you have any queries, please contact our editors at hello@myja.pub.

continued on page 3

Message from the Editor-in-Chief

Sustainability is everyone's responsibility.

Climate change has been the most significant threat to our existence even before the pandemic. In 2019, New York bore witness to a thunderous and rousing speech from a 16-year-old Swedish climate activist, Ms Greta Thunberg. She chastised world leaders for failing to take sufficient steps to arrest climate change. Her ferocity was a welcomed breath of fresh air from a generation intent on protecting Mother Earth.

The Berita Anestesiologi aims to champion this cause by going utterly digital from this July edition onwards using the Flippingbook platform. We have lined up an exciting array of articles including going green with "grass", sustainable anaesthesia to reduce our carbon footprints, a brand new 'Money Never Sleeps' series to help you afford that new BMW iX (Fully Electric Vehicle) and a plethora of shared experiences by members of various subspecialties from home and afar. Our resident Chef in Black is also back with a mouth-watering eco-friendly dessert and to please your guilty conscience, we have shared how one can exercise and burn that belly fat.

Finally, I wish you all a better July than the lockdown last year, and as always, if you have something creative you wish to share, please put fingers to keyboard (instead of pen to paper to save our trees) and send in your articles, photos, jokes or poems to the secretariat@msa.net.my. Let's save this world together; it's the only planet with nasi lemak and chocolates.

Dr Anand Kamalanathan

continued from page 2

Guidelines on Elective Surgery and Anaesthesia for Patients After Covid-19 Infection, published on 19th March 2022

We wish to update members on the above guideline, which can be accessed from our MSA website.

National Anaesthesia Day Celebration (NAD) 2022

In conjunction with World Anaesthesia Day, our NAD this year will be celebrated on Sunday, 16th October 2022. This year, UiTM Puncak Alam will host the event and many exciting activities will be held on the day.

We look forward to members' attendance and participation in the event.

MSA Website

We are pleased to inform you that the makeover of our MSA website is expected to be available to members by the end of July. The makeover gives a fresh look and a more user-friendly platform for members. So, do check it out.

Until we meet again in the next issue, I hope all of you will stay safe and adhere to the SOPs at work and in the community. I look forward to meeting every one of you personally at the upcoming MSA/CoA ASC and other MSA events.

Contents

Dynastat® IV/IM
(parecoxib sodium for injection)

Dynastat® (parecoxib) is recommended as an effective component of multimodal analgesia for the management of acute postsurgical pain in all ERAS society guidelines.[1]

ERAS; enhanced recovery after surgery

Images for representation purposes only

Abbreviated Prescribing Information[2]
Composition: Parecoxib sodium powder and solvent for solution for injection. **Indications:** For management of post-operative pain in the immediate post-operative setting only. **Recommended dosage:** Initial dose – 40mg (given IV or IM) followed by 20 or 40mg every 6 to 12 hours, as required, up to a maximum daily dosage of 80mg. There is limited clinical experience with parecoxib treatment beyond three days. Reduce to half the dose for elderly patients <50kg. For moderate hepatic impairment, use lowest recommended dose. Not recommended in severe hepatic impairment patients. Caution should be observed in patients with severe renal impairment or patients who may be predisposed to fluid retention. Parecoxib should be initiated at the lowest recommended dose. **Contraindications:** Patients with known hypersensitivity to parecoxib or to any other ingredient of the product. Patients who have demonstrated allergic-type reactions to sulfonamides. Patients who have experienced asthma, urticaria, or allergic-type reactions after taking acetylsalicylic acid (aspirin) or non-steroidal anti-inflammatory drugs (NSAIDs), including other cyclooxygenase-2 (COX-2) specific inhibitors. Severe hepatic impairment (serum albumin <25g/L or Child-Pugh score ≥10). The third trimester of pregnancy and breast-feeding. Active peptic ulceration or gastrointestinal (GI) bleeding. Inflammatory bowel disease. Congestive heart failure (NYHA II-IV). Treatment of post-operative pain following coronary artery bypass graft (CABG) surgery. Established ischaemic heart disease, peripheral arterial disease and/or cerebrovascular disease. **Special Precautions:** COX-2 inhibitors have been associated with an increased risk of cardiovascular and thrombotic adverse events when taken long term. Upper gastrointestinal (GI) perforations, ulcers, or bleeds have occurred in patients treated with parecoxib. Valdecoxib, the active moiety of parecoxib, contains a sulfonamide moiety and patients with a known history of a sulfonamide allergy may be at a greater risk of skin reactions. Serious skin reactions, including erythema multiforme and Stevens-Johnson syndrome, hypersensitivity reactions (anaphylactic reactions and angioedema), and drug reaction with eosinophilia and systemic symptoms syndrome (DRESS syndrome) may occur. Cases of severe hypotension shortly following parecoxib administration have been reported in post-marketing experience with parecoxib. Anticoagulant activity should be monitored, particularly during the first few days after initiating parecoxib, in patients receiving warfarin or similar agents, since there patients may be at increased risk of bleeding complications. As with all NSAIDs, parecoxib can lead to the onset of new hypertension or worsening of pre-existing hypertension, either of which may contribute to the increased incidence of cardiovascular events. As with other drugs known to inhibit prostaglandin synthesis, fluid retention and edema have been observed in some patients taking parecoxib. Caution should be used when initiating treatment in patients with dehydration. A patient with symptoms and/or signs of liver dysfunction, or in whom an abnormal liver function test has occurred, should be monitored carefully or evidence of the development of a more severe hepatic reaction while on therapy with parecoxib. By reducing inflammation, parecoxib may diminish the utility of diagnostic signs, such as fever, in detecting infections. The concomitant use of pain, constipation, dyspepsia, vomiting, edema peripheral, alveolar osteitis (dry socket), dizziness, insomnia, oliguria, sweating increased, pruritus, hypotension. **Presentation:** 5 x 1's vial of 40mg parecoxib with 5 x 2mL solvent and 10 x 1's vial of 40mg parecoxib.
Full prescribing information is available upon request.
API-DYNASTAT-1120

References: 1. Beverly A, et al. Anesthesiol Clin. 2017;35:115-143. **2.** Pfizer Malaysia Dynastat Prescribing Information, 23 November 2020.

For Healthcare Professionals only

Pfizer

Pfizer Malaysia Sdn. Bhd. Registration No: 197801003134 (40131-T)
Level 10 & 11, Wisma Averis, Tower 2, Avenue 5, Bangsar South, No. 8, Jalan Kerinchi, 59200 Kuala Lumpur.
Tel: 603-2281 6000 Fax: 603-2281 6388
www.pfizer.com.my
PP-DYN-MYS-0237-17MAY2021

Dynastat® IV/IM
(parecoxib sodium for injection)

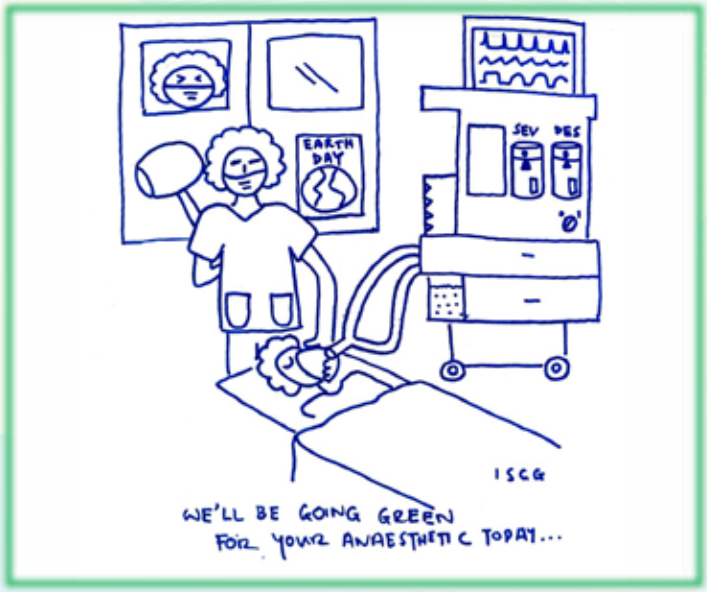
Anaesthesia & Sustainability

by Dr Ivy Sim Chui Geok
Hospital Universiti Teknologi MARA, Selangor, Malaysia

"We are the first generation to feel the impact of climate change and the last generation that can do something about it"[1]

These are powerful words that drive home the reality of the toll that our planet is taking and sums up the urgency in which we need to act before it becomes a little too late.

Never before have we, as a human race, experienced these many sequential events of abnormal weather to environmental disasters. It is a strong indication that our planet is not doing well. The pace of climate change has accelerated to such realms, we may indeed be at a tipping point.



Leave it to the tree-huggers?

Climate change is not only a "white man's" cause. It is not something that those we consider wealthy and with less basic worries than others are concerned with. Neither should it be considered an unsavoury activity associated with waste that seems undeserving of our attention. It is our problem too because we share this blue marble that we call home. If developing countries do not make a concerted effort, we will simply repeat the histories of those who industrialized before us and make the same grievious mistakes. We need to learn how to co-exist alongside our environment and preserve the natural resources we have to keep the earth healthy.

The landmark Paris Agreement is a legally binding international treaty (of which Malaysia is a signatory) resulting from the annual UN Climate Change Conference in 2015. It was signed on Earth Day, 22nd April 2016. It aimed to limit global warming to 2 degrees Celsius (preferably 1.5 degrees Celsius) compared to pre-industrial levels.[2] We are currently at 1.1 degrees Celcius.[3] It is a tall order for a planet.

Signatories pledge to reduce their country's Greenhouse Gas (GHG) emissions and build resilience to face the impact of the inevitable warming of our environment. Because implementation is fraught when nations have unequal resources, developed countries take the lead and work with less endowed ones to transfer the technology and finances needed to reach this gargantuan collective goal. It really does, as the saying goes, "take a village" if we are not only to survive together but flourish.

First, do no harm…to the environment too

The environmental impact should be a key concern for those who work in healthcare because at the ground level, it affects the health of the population and the usage of healthcare services. The quality of the environment that we live in directly impacts our health.[4]

If healthcare on a global scale were considered a country, it would be the 5th largest carbon emitter in the world.[5] In countries like the UK and the US, healthcare contributes 4-8% of the country's GHG emissions.[6,7] We may not be a coal mine spewing out dust and smoke into the air but the supply chain of the products that we use, building operations, and even how our waste is managed has a sizeable carbon footprint.

Healthcare providers have an essential role in their communities to lead by example and look into ways to provide services that do not compromise patient safety while minimizing our carbon footprint. It has even been advocated as a permanent component in the medical and anaesthetic training curriculum which underlines the importance of improved awareness among our doctors.[3] Hospitals represent large organizations which should be proactive in finding ways in which they can contribute to reducing their environmental impact.

The fundamentals of sustainability are to use renewable energy sources, minimize energy use, reuse equipment where possible, and recycle waste responsibly. In a sunny climate such as ours, solar energy is one of the options for

clean energy. It requires a commitment to infrastructure. However, a cost-benefit analysis could yield benefits in the long run for buildings that use a significant amount of energy like hospitals. As with many sustainability efforts, commissioning new buildings is an excellent opportunity for intelligent design and planning. It will yield leaner and more energy-efficient facilities that can ultimately offset the higher initial costs and continue being sustainable. Conversion to LED lights which saves electricity in buildings, keeps the lights on all day would also generate considerable savings.[8] It is an investment so they say; one which keeps our planet cooler. Increasing demand for greener solutions will provide the impetus for companies to source for them and make these technologies available. Ultimately, with the higher volume of use, they can also become more affordable.

How green is the "Gas Man"?

Anaesthetists are no different from other healthcare providers in our concern of the importance of practising in a carbon-neutral environment. We are also uniquely placed in this role due to our use of halogenated agents in our daily work administering general anaesthesia. Our anaesthetic gas scavenging system works to remove inhalational agents from our immediate OT spaces but it is subsequently released back into the environment. These medical gases are GHGs but are currently unregulated due to clinical need.[6] However, it does not mean that we should not be perceptive in choosing our anaesthetic techniques to reduce our environmental impact. Desflurane and nitrous oxide, in particular, have a much higher impact and the latter even depletes the ozone layer.[6]

The impact of GHGs are placed on a relative scale of global warming potential or GWP in comparison to carbon dioxide. For example, Desflurane's 100-year global warming potential or GWP100 is 2540, meaning it has 2540 times the global warming potential of carbon dioxide.[5] This is in comparison to sevoflurane 130 and nitrous oxide 298. To put matters into context, 1 MAC hour of sevoflurane is equivalent to the carbon dioxide produced from a 6.5km car drive, nitrous oxide 95km, and Desflurane, a whopping 320km! That's a drive from Kuala Lumpur to Johor Bahru from just one hour of Desflurane anaesthesia!

Various associations of anaesthesiologists worldwide advocate limiting the use of such GHGs, utilizing low-flow anaesthesia, regional anaesthesia, or considering using TIVA where available, although the jury is still out on the latter. The carbon generated from the use of TIVA's pumps, tubing, and drugs is estimated to be four times less compared to inhalation anaesthesia but there is still a degree of uncertainty on how TIVA drugs can contaminate our water supply in the long run.[5,6] Although it is not available in Malaysia, there are specially designed canisters that capture inhaled anaesthetic gases for reprocessing and, thus, prevent their release into our atmosphere. It is an example of how technology can help us stay carbon neutral.

Get them young

We should also advocate for our young doctors to be conscious of the disposable items that can be conserved. For example, syringes and needles for drawing up medicines should be minimized and to plan the use of medicines when excess doses can be used for other patients rather than discarded. It is mind-boggling how much plastic and expensive medicines go into the bin which need not be so. Doctors should be conscientious when ordering investigations and prevent unnecessary repeat ones. We should also make simple good habits of switching off the lights and placing devices on power-saving modes when leaving for the day as second nature. These seemingly trivial matters provide a foundation for building a generation of environmentally conscious and responsible advocates.

Paper is so…last season

Going paperless is also fast becoming a green option adopted by many hospitals in Malaysia. Since the pandemic, there has been an accelerated learning curve for the use of the internet and technology to maintain our communications. E-mails for formal communication and electronic patient notes have shown us that we can indeed ditch paper. We are only catching up to our counterparts in other countries who have been doing so for the last few decades. As an added benefit, patient notes are legible, efficiently accessible, stored securely, and can be easily audited. Online meetings and conferences also mean reducing the environmental impact of land and air travel.[9] Even operating theatre lists can be managed using online systems, eliminating the delays of using paper and by-hand deliveries.

Mountains of PPE

Intensive care units are not left out of the equation either. One study estimated that the electricity used to power the monitors and other equipment per patient in ICU was equivalent to that of a 4-person household.[10] There is also the high use of consumables and PPE for infective cases

which albeit necessary, can be rationalised by the same principles of sustainability (using renewable energy, reducing energy consumption, using reusable equipment, and proper recycling and waste management systems). Dialogue with manufacturers which encourages environmentally responsible manufacturing practices, trade-in, and recycling programmes will also aid in reducing the impact of using our necessary equipment. Although it is a more convoluted issue, the use of the ICU's considerable resources to sustain life should also be governed by non-futility of care and aim to avoid over-zealous treatment which does not achieve the patient's goals.[9]

Go for Green

The damage is still reversible as observed during the COVID-19 pandemic where lockdowns meant the ceasing of many human activities which pollute the air and waterways, and harm wildlife. Nature has a way of restoring itself if we will only change the way we live in it. At least it is the hope that we will come to realise while we still have the upper hand fully.

This is the very first "Berita Anestesiologi" edition that has gone fully digital which is an excellent affirmation in support of the environment. I encourage all anaesthesia care providers to look closely at their workspaces and to think of ways to be greener, to be advocates within their hospitals, and to encourage initiatives that work towards balancing our carbon footprints.

Below are a few resources with ideas on making our anaesthesia workspaces greener:

- Guide to Green Anaesthesia (Association of Anaesthetists)
  https://anaesthetists.org/Home/Resources-publications/Environment/Guide-to-green-anaesthesia

- Anaesthesiology Sustainability Checklist (Yale Centre on Climate Change and Health)
  https://ysph.yale.edu/yale-center-on-climate-change-and-health/healthcare-sustainability-and-public-health/inhaled-anesthesia-climate-initiative/

- What can I do professionally? (Greener Anaesthesia and Sustainability Project)
  https://www.gaspanaesthesia.com/at-work

REFERENCES

1. Remarks by the President at U.N. Climate Change Summit. United Nations Headquarters New York, New York. September 23 2014. https://obamawhitehouse.archives.gov/the-press-office/2014/09/23/remarks-president-un-climate-change-summit. Accessed on May 11 2022

2. The Paris Agreement. United Nations Climate Change. https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement. Accessed on May 11 2022

3. White SM, Shelton CL, Gelb AW, Lawson C, McGain F, Muret J, Sherman JD, representing the World Federation of Societies of Anaesthesiologists Global Working Group on Environmental Sustainability in Anaesthesia, McGain F, Muret J, Lawson C. Principles of environmentally-sustainable anaesthesia: a global consensus statement from the World Federation of Societies of Anaesthesiologists. Anaesthesia. 2022 February 1

4. Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks. Meeting report. September 13 2018. https://www.who.int/publications/i/item/9789241565196. Accessed on May 11 2022

5. McGain F, Muret J, Lawson C, Sherman JD. Environmental sustainability in anaesthesia and critical care. *British Journal of Anaesthesia*. 2020 Nov 1;**125**(5):680-92

6. Greening the Operating Room and Perioperative Arena: Environmental Sustainability for Anesthesia Practice. https://www.asahq.org/about-asa/governance-and-committees/asa-committees/environmental-sustainability/greening-the-operating-room. Accessed May 11 2022

7. Delivering a 'Net Zero' National Health Service. Oct 2020. https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf. Accessed May 11 2022

8. Hospitals reduce their carbon footprints with sustainable solutions. https://www.hfmmagazine.com/articles/4274-hospitals-reduce-their-carbon-footprints-with-sustainable-solutions. Accessed May 11 2022

9. Bein T, Koch S, Schulz C. What's new in intensive care: environmental sustainability. *Intensive Care Medicine*. 2021 Aug;**47**(8):903-5

10. Pollard AS, Paddle JJ, Taylor TJ, Tillyard A. The carbon footprint of acute care: how energy intensive is critical care?. *Public health*. 2014 Sep 1;**128**(9):771-6

Can-Nabis or Cannot in Pain Medicine?

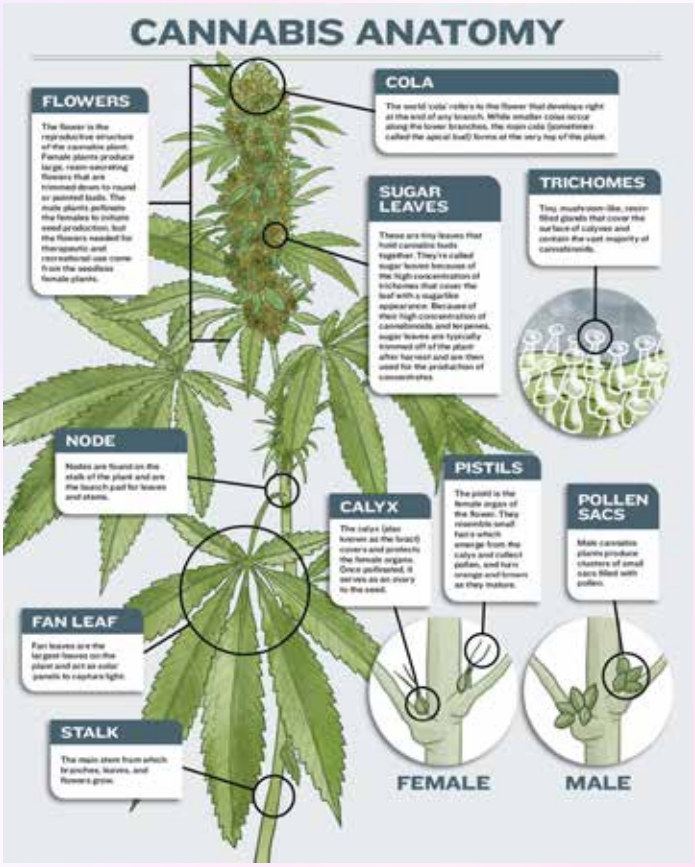
by Dr Aldred Soo Cheng Wei
Hospital Queen Elizabeth, Sabah, Malaysia

> *Death Sentence for Malaysia Man Who Gave Patients Free Cannabis Oil 2018*
> *Delivery man gets death for trafficking cannabis 2021*
> *"Dr Ganja" to enter defence on 36 drug-related charges in January 2022*
> *"Mimpi Laila" singer faces the death penalty for cultivating cannabis in March 2022*

These were the headlines for convicted and ongoing cases of trafficking cannabis in Malaysia over the past five years. Under current Malaysian legislation, an individual convicted for possession of 20 grams of cannabis is liable to be punished with imprisonment for a term which shall not be less than two years but shall not exceed five years, and he shall also be punished with whipping of not less than three strokes but not more than nine strokes. For conviction of possession of up to 50 grams (1.5 ounces) or more of cannabis, the individual may be sentenced to life or for a term of imprisonment which shall not be less than five years, and he shall also be punished with whipping of not less than ten strokes. If in possession of 200 grams (7 ounces) or more, this is classified as drug trafficking by the Malaysian Law under the Dangerous Drugs Act 1952. Under the charge of trafficking under the Dangerous Drugs Act 1952, convicted offenders run the risk of being sentenced with the death penalty (which is carried out by hanging). Currently, all forms of possession of cannabis are illegal in Malaysia unless for medicinal purposes prescribed by a medical practitioner.[32] However, the growing pressure of public opinion since 2018, combined with our neighbouring countries such as Thailand legalising possession of cannabis in 2021 may encourage our government to amend the law likewise. Last November, our Health Minister, Yang Berhormat Khairy Jamaluddin announced that cannabis can be imported and used in the country for medicinal purposes if the product complies with the law. Our Prime Minister also responded positively on legalising possession of cannabis in April 2022.

A brief history of cannabis

Cannabis refers to a tall Asian herb, *Cannabis sativa* of the family *Cannabaceae*, the hemp family. On the streets, cannabis is more popularly known as *ganja*, hash, weed, pot or even marijuana. It is infamous for its psychoactive component where one can get "stoned" or "high" by smoking or ingesting it. In addition to its recreational use, the plant has been valued for its use as fibre, rope, food, medicine and as part of religious practices for the past millennium. History has shown that the human usage of cannabis started as early as the third millennium B.C. In the second century CE, the Chinese surgeon Hua Tuo was documented using an anaesthetic made from cannabis resin and wine (麻-油) to perform complex surgical procedures including limb amputations. Its use as an analgesic was recorded in the world's oldest pharmacopoeia, the Chinese pen-ts'ao ching, as well.[30]



Cannabis for medicinal purposes - What the research says

The opioid crisis in the West, the lack of alternative options as well as the side effects in our non-opioid choices as an adjunct to chronic pain management has resulted in cannabis becoming a popular solution to traditional pain-relieving medications. Observational studies and surveys reported that 70% of cannabis usage for medicinal purposes are used to control their pain.[1] Several reports demonstrated that cannabis might also

ease certain types of chronic pain. However, cannabis performance is unimpressive as an analgesic for acute pain and is not recommended to be used until further research is conducted.[2,16,17]

In recent years, various studies have looked at the effects of cannabis for chronic pain. Some study subjects used part of the plant extracts while, in other studies, the study subjects smoked a specific cannabis strain to compare with another group smoking, a placebo. Cannabis extract has the specific ingredient known as THC:CBD (*THC = tetrahydrocannabinol*; CBD = *cannabidiol*) known for its distinct therapeutic and side effects. The whole plant is smoked for its "entourage effect", whereby multiple compounds within cannabis work synergistically with THC to provide better pain relief than a single compound.[3]

A 2020 review on the use of cannabis and cannabinoids for various chronic non-cancer pain conditions reported that several trials had positive results.[4] Two randomised controlled trials showed that patients with Human Immunodeficiency Virus (HIV) disease and painful polyneuropathy who smoked cannabis daily for five days had lower daily pain scores and a 30% reduction in pain intensities compared to baseline.[5,6] Two other randomised control trials reported patients with central or peripheral neuropathic pain had lower daily pain scores and improved sleep quality in the treatment arm.[7,8]

Initial research in 2017 found evidence suggesting that cannabis could reduce chronic or neuropathic pain in advanced cancer patients.[14] Specifically, five clinical studies evaluated the effect of THC or CBD on managing cancer pain. Higher doses of THC were correlated with increased pain relief in some studies, but no opioid sparing effect was noted.[14] However, a recent meta-analysis on cannabinoids for adult cancer-related pain reported that the addition of cannabinoids to opioids did not reduce cancer pain and there was a high dropout rate in the treatment arm due to side effects.[15]

Other studies have reported the benefits of cannabis and cannabinoids for other types of chronic pain. For example:

1. *CAMS* and *MUSEC* trials showed that multiple sclerosis patients who received cannabis had less muscle stiffness and spasticity with a reduction in pain as well when compared to placebo.[12,13]

2. Several small observational studies reported pain relief, improved quality of sleep, increased pain thresholds and mood improvement in fibromyalgia patients who used inhaled cannabis.[9]

3. A literature review done in 2020 on cannabis use for migraine and chronic headaches showed that it was effective in decreasing daily analgesic intake, dependence, and level of pain intensity. Some patients experienced a prolonged and persistent improvement in their health and well-being (both physically and mentally) after long-term use of cannabis.[10]

4. A few other observational studies reported that cannabis improves quality of life in chronic pain patients as well.[11]

These findings suggest that cannabis and cannabinoids appear to be the new "wonder drug". Nonetheless, most of the reports are based on small sample sizes and the studies were of short duration. Therefore, as with all remedies, claims of effectiveness should be critically evaluated and treated with caution.

Pharmacology of Cannabis

The cannabis plant contains more than 500 components, of which 113 cannabinoids have presently been identified. Four main ones are delta-9-tetrahydrocannabinol (delta-9-THC), cannabidiol (CBD), delta-8-tetrahydrocannabinol and cannabinol (CBN). Apart from cannabidiol, these compounds are all psychoactive, the most potent being delta-9-THC.[18] Current medical cannabis treatments are based on THC:CBD ratio.

Cannabinoids are endogenous or exogenous compounds with activity on the cannabinoid receptors (CB1 & CB2). CB1 and CB2 receptors are seven transmembrane G-protein coupled receptors (GPCRs).[19] These two receptors are part of the endocannabinoid system which impacts physiological processes affecting pain modulation,[20] memory, and appetite[21] with reported anti-inflammatory effects[22] as well as other immune system[23] responses.

CB1 receptors are primarily found in the brain (limbic system), dorsal root ganglions and central nervous system and to a lesser extent in other tissues. CB1 mediates psychoactive, pain regulation, memory processing and motor control.[24]

CB2 receptors are primarily located in the peripheral organs especially cells associated with the immune system.[25] CB2 slows down chronic inflammatory processes, modulates chronic pain, and stimulates the release of β-endorphins.[26] CB2 receptors do not produce psychoactive effects when stimulated.

Routes of Administration

Cannabis is commonly inhaled and is absorbed rapidly into the bloodstream, avoiding first pass metabolism in the liver. Inhaled cannabis has an onset time within minutes after one puff, attains peak effect in one hour and maintains a steady effect for 3-5 hours.[27]

Oral administration of cannabis oil or capsules has an onset time within an hour, its effect peaking after several hours with a variable steady effect lasting 8-30 hours due to its poor bioavailability. This effect is reported to occur around 6-20% with unpredictable psychotropic effects secondary to potent psychoactive metabolites.[4,28]

At present, there are four United States Food and Drug Administration-approved (U.S. FDA) drugs commercially available that can activate the cannabinoid system, which

are *Cesamet*® (nabilone), *Marion*® (THC + dronabinol), *Epidyolex* (pure CBD) and *Sativex*® (THC+CBD). Both *Cesamet* and *Marino* are used to treat nausea induced by chemotherapy and to improve appetite in patients with HIV disease. *Epidyolex* is used in treating children with severe forms of epilepsy, Lennox-Gastaut syndrome and Dravet syndrome, while *Sativex* is used for individuals living with multiple sclerosis to relieve spasticity. The FDA has yet to approve the use of any cannabis drugs to manage pain. However, *ORAVEXX*, a non-addictive proprietary cannabidiol (CBD) composition for managing pain and inflammation, is currently being studied in clinical trials.[29]

Is cannabis safe?

In general, cannabis when used for medicinal purposes is well tolerated among adult users. However, like any other drug, there are some common side effects including anxiety, paranoia, drowsiness, insomnia, lethargy, increased appetite, bloodshot eyes, increased heart rate, memory impairment and dry mouth to name a few.

Studies have indicated that the effective dose of THC is at least 1000 times lower than the estimated lethal dose (therapeutic ratio of 1000:1).[30] In layperson terms, we would need to smoke approximately 680 kg of cannabis within 15 minutes in order to have a lethal overdose. However, marijuana-related usage disorder and tolerance can happen over time if the THC level is too high. To date, there is no one ideal THC level recommended for cannabis usage for medicinal purposes.

Future of cannabis for medicinal purposes in Malaysia

More than 40 countries worldwide have legalised cannabis with Thailand being the first in Southeast Asia. In April 2022, our Cabinet raised policy issues on the development of cannabis for medicinal purposes within the country. The Cabinet believes Malaysia has a vast opportunity in participating in cannabis development for medicinal and research purposes, which could deliver many benefits for the country. Today, the global cannabis market in the COVID-19 period has been estimated to be valued at USD 25 650. 4 million in 2021 and is expected to reach USD 176,005.5 million by 2030.[31] Our policymakers may amend the law and conduct studies to develop the industry for health-related benefits and boost the country's economy.

Conclusion

Cannabis is the most widely used plant in the world with its usage described over a few civilisations. Its benefits are evident in many studies for various diseases. However, research on cannabis for pain management is limited to small and short studies despite encouraging outcomes seen within these small studies. On the other hand, many studies only addressed the short-term risks and evidence is insufficient concerning long-term risks. Additionally, the ideal administration route and dosage have not been clearly established. Nonetheless, with several countries actively researching the benefits of cannabis for medicinal purposes, answers to these questions might be knocking on our doors soon.

REFERENCES

1. Ethan B Russo, MD, Cannabis and Pain, Pain Medicine, Volume 20, Issue 11, November 2019, Pages 2083-2085, https://doi.org/10.1093/pm/pnz227

2. Stephen Schug et al., 5th edition| Acute Pain Management: Scientific Evidence, 2020

3. Ferber SG, Namdar D, Hen-Shoval D, Eger G, Koltai H, Shoval G, Shbiro L, Weller A. The "Entourage Effect": Terpenes Coupled with Cannabinoids for the Treatment of Mood Disorders and Anxiety Disorders. *Curr Neuropharmacol.* 2020;**18**(2):87-96. doi: 10.2174/1570159X17666190903103923. PMID: 31481004; PMCID: PMC7324885

4. Johal H, Devji T, Chang Y, Simone J, Vannabouathong C, Bhandari M. Cannabinoids in Chronic Non-Cancer Pain: A Systematic Review and Meta-Analysis. Clin Med Insights Arthritis Musculoskelet Disord. 2020 Feb 19;13: 1179544120906461. doi: 10.1177/1179544120906461. PMID: 32127750; PMCID: PMC7031792

5. Abrams DI, Jay CA, Shade SB, Vizoso H, Reda H, Press S, et al. Cannabis in painful HIV-associated sensory neuropathy: a randomised placebo-controlled trial. *Neurology*. 2007;**68** (7):515-21. https://doi.org/10.1212/01.wnl.0000253187.66183.9c

6. Ellis RJ, Toperoff W, Vaida F, van den Brande G, Gonzales J, Gouaux B, et al. Smoked medicinal cannabis for neuropathic pain in HIV: a randomised, crossover clinical trial. *Neuropsychopharmacology*. 2009;**34**(3):672-80. https://doi.org/10.1038/npp.2008.120

7. Wilsey B, Marcotte T, Deutsch R, Gouaux B, Sakai S, Donaghe H. Low-dose vaporised cannabis significantly improves neuropathic pain. *J Pain.* 2013;**14**(2):136-48. https://doi.org/10.1016/j.jpain. 2012.10.009. A RCT that demonstrated analgesia with low- dose vaporised cannabis

8. Ware MA, Wang T, Shapiro S, Robinson A, Ducruet T, Huynh T, et al. Smoked cannabis for chronic neuropathic pain: a randomised controlled trial. *CMAJ.* 2010;**182**(14):E694-701. https://doi.org/ 10.1503/cmaj.091414

9. Gonen T, Amital H. Cannabis and Cannabinoids in the Treatment of Rheumatic Diseases. *Rambam Maimonides Med J.* 2020 Jan 30;**11**(1):e0007. doi: 10.5041/RMMJ.10389. PMID: 32017684; PMCID: PMC7000161

10. Poudel S, Quinonez J, Choudhari J, Au ZT, Paesani S, Thiess AK, Ruxmohan S, Hosameddin M, Ferrer GF, Michel J. *Medical Cannabis, Headaches, and Migraines: A Review of*

the Current Literature. Cureus. 2021 Aug 24;**13**(8):e17407. doi: 10.7759/cureus.17407. PMID: 34589318; PMCID: PMC8459575

11. Ramin Safakish, MD, FRCPC, Gordon Ko, MD, RCPSC, Vahid Salimpour, MD, MFPC, Bryan Hendin, Imrat Sohanpal, MD, FRCPC, Gena Loheswaran, PhD, Sun Young Rosalia Yoon, PhD, Medical Cannabis for the Management of Pain and Quality of Life in Chronic Pain Patients: A Prospective Observational Study, Pain Medicine, Volume 21, Issue 11, November 2020, Pages 3073-3086, https://doi.org/10.1093/pm/pnaa163

12. Zajicek JP, Sanders HP, Wright DE, Vickery PJ, Ingram WM, Reilly SM, Nunn AJ, Teare LJ, Fox PJ, Thompson AJ. Cannabinoids in multiple sclerosis (CAMS) study: safety and efficacy data for 12 months follow up. *J Neurol Neurosurg Psychiatry.* 2005 Dec;**76**(12):1664-9. doi: 10.1136/jnnp.2005.070136. PMID: 16291891; PMCID: PMC1739436

13. Zajicek JP, Hobart JC, Slade A, Barnes D, Mattison PG; MUSEC Research Group. Multiple sclerosis and extract of cannabis: results of the MUSEC trial. *J Neurol Neurosurg Psychiatry.* 2012 Nov;**83**(11):1125-32. doi: 10.1136/jnnp-2012-302468. Epub 2012 Jul 12. PMID: 22791906

14. Blake A, Wan BA, Malek L, DeAngelis C, Diaz P, Lao N, Chow E, O'Hearn S. A selective review of medical cannabis in cancer pain management. *Ann Palliat Med.* 2017 Dec;**6**(Suppl 2):S215-S222. doi: 10.21037/apm.2017.08.05. Epub 2017 Aug 23. PMID: 28866904

15. Boland EG, Bennett MI, Allgar V, Boland JW. Cannabinoids for adult cancer-related pain: systematic review and meta-analysis. *BMJ Support Palliat Care.* 2020 Mar;**10**(1):14-24. doi: 10.1136/bmjspcare-2019-002032. Epub 2020 Jan 20. PMID: 31959586

16. Gazendam A, Nucci N, Gouveia K, Abdel Khalik H, Rubinger L, Johal H. Cannabinoids in the Management of Acute Pain: A Systematic Review and Meta-analysis. *Cannabis Cannabinoid Res.* 2020 Dec 15;**5**(4):290-297. doi: 10.1089/can.2019.0079. PMID: 33381643; PMCID: PMC7759255

17. Pantoja-Ruiz, Camila et al. Cannabis and pain: a scoping review. Brazilian Journal of Anesthesiology [online]. 2022, v. 72, n. 01 [Accessed 15 May 2022] , pp. 142-151. Available from: <https://doi.org/10.1016/j.bjane.2021.06.018>. Epub 28 Feb 2022. ISSN 2352-2291. https://doi.org/10.1016/j.bjane.2021.06.018

18. Jensen B, Chen J, Furnish T, et al. Medical marijuana and chronic pain: a review of basic science and clinical evidence. *Curr Pain Headache Rep.* 2015;**19**:50

19. Morales, P., Hurst, D. P., and Reggio, P. H. (2017). Molecular targets of the phytocannabinoids-a complex picture. Prog. Chem. Org. Nat. Prod. 103, 103-131. doi: 10.1007/978-3-319-45541-9_4

20. Wang L, Hong PJ, May C, et al. Medical cannabis or cannabinoids for chronic non-cancer and cancer related pain: a systematic review and meta-analysis of randomised clinical trials. *BMJ* 2021;**374**:n1034. doi:10.1136/bmj.n1034

21. Kirkham TC. Cannabinoids and appetite: food craving and food pleasure. *Int Rev Psychiatry.* 2009 Apr;**21**(2):163-71. doi: 10.1080/09540260902782810. PMID: 19367510

22. Malfait A, Gallily R, Sumariwalla P, et al. The nonpsychoactive cannabis constituent cannabidiol is an oral anti-arthritic ther- apeutic in murine collagen-induced arthritis. *Proc Natl Acad Sci U S A.* 2000;**97**:9561-6

23. Nichols JM, Kaplan BLF. Immune Responses Regulated by Cannabidiol. *Cannabis Cannabinoid Res.* 2020 Feb **27**;5(1):12-31. doi: 10.1089/can.2018.0073. PMID: 32322673; PMCID: PMC7173676

24. Vucˇkovic'etal. Cannabis/CannabinoidsandPain Frontiers in Pharmacology, www.frontiersin.org November 2018 | Volume 9 | Article 1259

25. Niu, J., Huang, D., Zhou, R., Yue, M., Xu, T., Yang, J., et al. (2017). Activation of dorsal horn cannabinoid CB2 receptor suppresses the expression of P2Y(12) and P2Y(13) receptors in neuropathic pain rats. J. Neuroinflammation 14:185. doi: 10.1186/s12974-017-0960-0

26. Ibrahim, M. M., Porreca, F., Lai, J., Albrecht, P. J., Rice, F. L., Khodorova, A., et al

27. Agurell, S., Halldin, M., Lindgren, J. E., Ohlsson, A., Widman, M., Gillespie, H., et al. (1986). Pharmacokinetics and metabolism of delta 1-tetrahydrocannabinol and other cannabinoids with emphasis on man. Pharmacol. Rev. 38, 21-43

28. Issa, M. A., Narang, S., Jamison, R. N., Michna, E., Edwards, R. R., Penetar, D. M., et al. (2014). The subjective psychoactive effects of oral dronabinol studied in a randomised, controlled crossover clinical trial for pain. Clin. J. Pain 30, 472-478. doi: 10.1097/AJP.0000000000000022

29. Orcosa. (2022, April 22). - Modernising the way medicines are taken. https://www.orcosa.com/

30. The medical Cannabis Guidebook by Jeff Ditchfield and Mel thomas 2014.

31. Global Cannabis Market Size & Forecast Report 2021: A $176 Billion by 2030 - Growing Legalisation of Medical Cannabis in Various Countries Driving Growth - ResearchAndMarkets.com. (2022, February 3). Business Wire. https://www.businesswire.com/news/home/20220203005879/en/Global-Cannabis-Market-Size-Forecast-Report-2021-A-176-Billion-by-2030---Growing-Legalization-of-Medical-Cannabis-in-Various-Countries-Driving-Growth---ResearchAndMarkets.com#:%7E:text=The%20global%20cannabis%20market%20in,23.9%25%2C%202021-2030

POCUS for Airway - What is in the Way is the Practical Way

by Dr Ahmad Afifi Mohd Arshad
Hospital Sultanah Bahiyah, Kedah, Malaysia

Introduction

Avoiding 'fundamental attribution errors' by assuming that airway ultrasound (US) is not an anaesthetic armament is a situational conflict most of us are confronting while performing neck and airway point of care ultrasound (POCUS). This error is attributed to a high degree of airway disaster skills we have acquired over years of training and exposure to various airway crisis or potential crises in our careers. So, we tend to attribute the situational outcome to a specific instrument, algorithm, person or drug and dismiss the potential role of another aspect of care.

Indeed, this cognitive bias needs correction. Airway POCUS has recently been introduced as one of the teaching subjects in perioperative and point-of-care ultrasound tutorials in leading anaesthesia societies such as the American Society of Regional Anaesthesia (ASRA) and European Society of Regional Anaesthesia (ESRA).[1] Without question, the best way to approach this 'cognitive bias' in our setting is by instilling awareness, enhancing knowledge and sharpening skills that could be adopted in day-to-day practice. Knowledge of airway US roles in clinical assessments and bedside clinical interventions is imperative in keeping the airway POCUS alive and functional.

Clinical Indications & The Evidence

One of the earliest studies analysing the feasibility of airway diameter measurement in a small number of patients concluded that ultrasound underestimated the subglottic diameter.[2] However, in the past two decades, multiple prospective trials have shown an excellent correlation between ultrasound measurement of subglottic transverse diameter and selection of the endotracheal tube (ETT) based on its outer diameter, whether cuffed or uncuffed ETT.[3,4] The correlation is superior to the age-based or height-based formula in estimating ETT size.[5,6] The ultrasound performance is also comparable to computed tomography (CT) scan and magnetic resonance imaging (MRI).[7,8]

As the US machine is more accessible in clinical areas, its usage is extended to guide critical airway procedures such as scanning the ETT in the airway and confirming its placement in real-time intubations. A systematic review of 17 studies involving nearly 1600 patients concluded that airway US is highly accurate in recognising endotracheal or oesophageal intubation, with 98.7% sensitivity and 97.1% specificity.[9] Whether confirmation by US is done post-intubation or in real-time during intubation, the endotracheal or oesophageal intubation can be recognised.

There is growing evidence to incorporate airway US as an assessment tool for difficult airways. Compared to the modified Mallampati test for difficult Cormack-Lehane III-IV laryngoscopic views, ultrasound imaging scores better than even X-ray and CT scans.[10] In a recent systematic review and meta-analysis, Sotoodehnia et al. examined 45 US indicators for predicting difficult intubation.[11] The most common US indexes which have a significant prediction of difficult intubation by pooled meta-analysis are parameters related to skin or tissue fold anterior and superior to the hyoid bone, such as 'skin thickness at the epiglottis and hyoid level', 'hyomental distance', 'hyomental distance ratio' and 'pre-epiglottic-space to epiglottis-vocal cord ratio'. However, there are no established reference lengths and validation studies at the moment. Besides anterior soft tissue thickness, tongue thickness is also an indicator of difficult intubation. The tongue can be insonated by a curvilinear probe placed under the jaw longitudinally. The cut-off point for difficult intubation is >6.1cm with an AUC of 0.78, sensitivity of 75% and specificity of 72%.[12]

Anaesthesiologists rarely perform emergency airway access via cricothyroidotomy. We always rely on our otorhinolaryngology colleagues to perform an awake tracheostomy. However, establishing a surgical airway is anaesthesiologists' responsibility in the can't intubate, can't oxygenate' scenario. In this life-threatening situation, identifying the cricothyroid membrane (CTM) location is critical, and digital surface palpation can be wildly inaccurate, especially in children.[13] Current UK guidance for emergency front of neck access advocates airway US if a clinical examination is insufficient to confirm CTM.[14] A systematic review concluded that it should be pre-emptively used, as US airway is superior to the palpation technique, objectively defines neck airway anatomy and offers comparable time to palpation for CTM localisation in the difficult airway.[15]

After surgery or acute trauma, airway POCUS was shown to be a non-invasive low-risk tool for assessing vocal cord immobility. A recent systematic review revealed a pooled sensitivity of 91% and specificity of 97% for assessing vocal cord mobility in children, compared to the gold standard of direct laryngoscopy.[16] It is also shown to be potentially helpful in diagnosing blunt airway injury and comparable to CT scan findings of Schaefer classification in laryngeal trauma.[17]

Airway US at the cricoid level can be a tool to predict extubation failure in children. Samprathi et al. described intracricoid peritubular free space (IPFS) measurement by US with a cut-off point of <5.16mm to predict post-extubation airway obstruction, with AUC 0.71, sensitivity 84%, positive predictive value 87%.[18] It is measured by deducting the cricoid's transverse internal diameter from the ETT tube's outer diameter (manufacturer diameter). Apart from IPFS, US measurement of laryngeal air column width (LACW) difference between inflated and deflated ETT cuff at vocal cord level is also useful to predict post-extubation stridor in children and adults. An LACW difference of <0.8mm is

a significant predictor of post-extubation stridor, with an AUC of 91%, sensitivity of 93%, and specificity of 86%.[19] The LACW difference is a more accurate diagnostic test than the cuff leak test, which at the cut-off leak of 11% only yielded an AUC of 59%, with a sensitivity of 61% and specificity of 53%.[19]

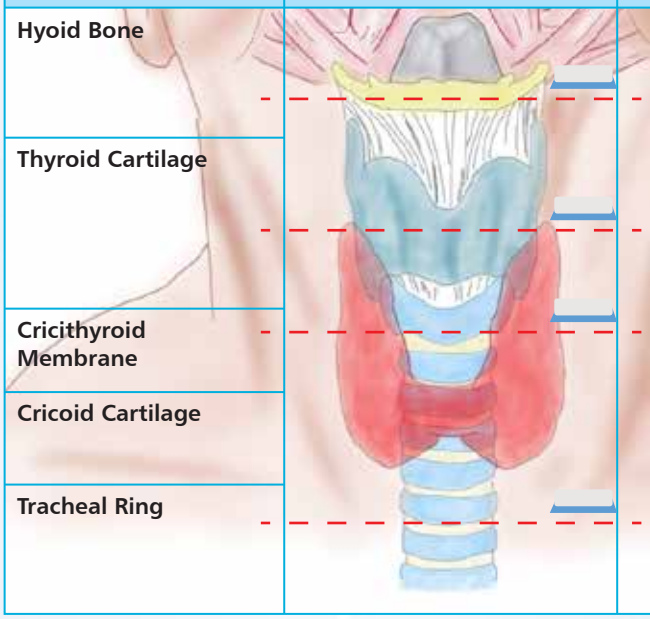
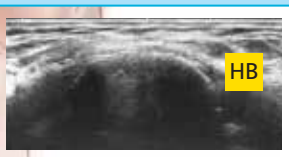
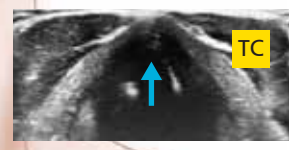
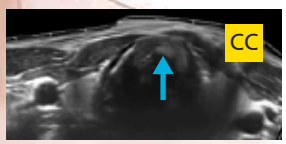
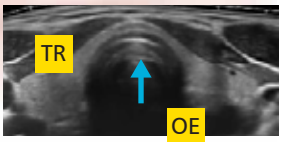
In obstructive sleep apnea (OSA), there is a good correlation between the number of airway US findings and the severity of OSA. A systematic review concluded that tongue thickness, the distance between lingual arteries, and the combination of neck diameters and US retropalatal thickness are good non-invasive US parameters to assess the severity of OSA.[20] Future studies need to see whether these findings are relevant for perioperative screening.

STEPS TO PERFORM AIRWAY SCAN

Transverse Scan of the Airway

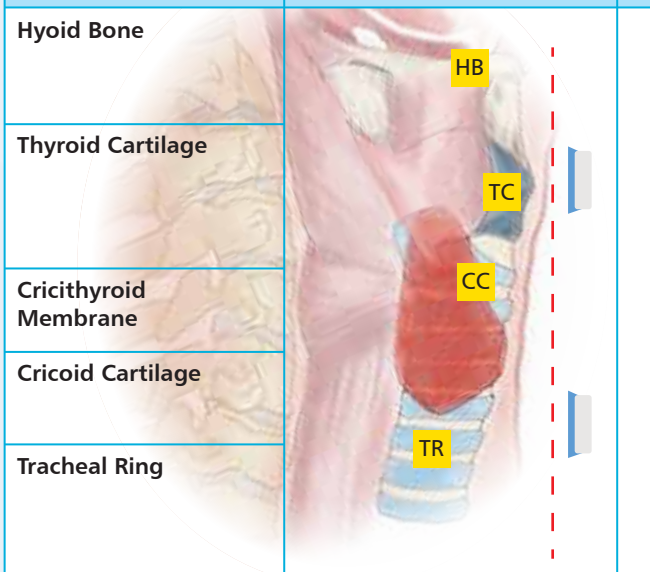
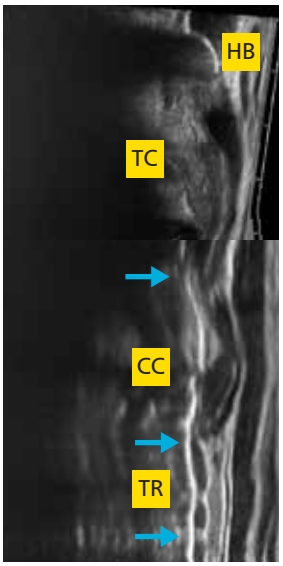
For ease of scanning and identification of structures, the scanning approach starts with a transverse section first, from the base of the neck followed by a sagittal view. Along the scanning process, structures are identified and marked appropriately.

Table I: Transverse airway POCUS at a different level of the neck. (HB - Hyoid Bone, THM - Thyrohyoid membrane, TC - Thyroid Cartilage, CTM - Cricothyroid Membrane, CC - Cricoid Cartilage, TR - Tracheal Rings, OE - Oesophagus, Air-Mucosal Interface, Blue Arrow - AMI)

Structure	Surface Anatomy & Image Acquisition	Sonoanatomy & Image Interpretation	Tips for Maximum Visibility
Hyoid Bone			• Head in extension • Tilting probe cephalad helps • Hyoid bone cast shadows vs strap muscles allow insonations • Generous gel layer on thyroid cartilage helps to overcome uneven cartilage surface esp in male
Thyroid Cartilage			
Cricithyroid Membrane			• Cricothyroid membrane - flat surface just cephalad to the cricoid cartilage
Cricoid Cartilage			• Cricoid cartilage - Largest, most superficial, rounded hypoechoic structure
Tracheal Ring			• Identify hyperechoic Air-Mucosal Interface

Sagittal Scan of the Airway

Table II: Sagittal airway POCUS along the longitudinal section of the neck. (HB - Hyoid Bone, THM - Thyrohyoid Membrane, TC - Thyroid Cartilage, CTM - Cricothyroid Membrane, CC - Cricoid Cartilage, TR - Tracheal Rings, AMC - Air-Mucosal Interface, Blue Arrow - AMI)

Structure	Surface Anatomy & Image Acquisition	Sonoanatomy & Image Interpretation	Tips for Maximum Visibility
Hyoid Bone			• Hyoid bone cast shadow, located superior to thyroid cartilage
Thyroid Cartilage			• Slightly parasagittal scanning will improve skin contact • Air-Mucosal Interface is brightest when probe is perpendicular to skin
Cricithyroid Membrane			• Cricothyroid Membrane attaches cricoid to thyroid cartilage
Cricoid Cartilage			• Most prominent rounded, thick cartilage • AMI - demarcates inner mucosal line
Tracheal Ring			• The first tracheal ring is wide

Advantages of Airway POCUS

Airway ultrasound provides easy access with practically no adverse complications in elective or emergency airway situations. The learning curve is very steep. A skill proficiency study following 10 minutes online tutorial and ten image interpretation of ETT confirmation on airway POCUS showed 90.9% on a single attempt and 100% on two practice attempts of performing airway POCUS for ETT confirmation.[21] As for ETT size selection, in comparison to other means of prediction using age or anthropometric formulation, airway insonation is far superior and accurate. An appropriate outer diameter of the endotracheal tube would facilitate placement and prevent short and long-term complications such as multiple intubation attempts, desaturation and hypoxaemia, high airway resistance, airway injury and long-term stenosis.[22]

The location of the tracheal structure can be determined accurately in a crisis where urgent surgical access is necessary. For example, in cases of pretracheal swelling such as a huge goitre, hematoma or embryonic cyst, the airway could be compressed or laterally displaced. Similarly, the surface anatomy of a normal airway might be lost or complicated in a post surgical scar or burn, post thyroid radiation and neck contracture. Real-time airway guidance in operation theatre for awake tracheostomy can accurately locate the position of the trachea and the best site of access.

Conclusion

In summary, this article aims to introduce an airway point-of-care ultrasound approach in perioperative settings. Within the framework of I-AIM (Indication, Acquisition, Interpretation and Management), airway POCUS should be taught by didactic teaching and hands-on simulated training with respect to the relevant clinical indications and scenarios. Preferably, competency skills must be assessed by expert peer evaluation or a certified POCUS organisation.

Based on current evidence, airway POCUS has a definite role in the confirmation of ETT placement, selection of ETT diameter and guidance for percutaneous airway procedure. It has significant potential in predicting difficult intubation, assisting diagnosis of airway trauma and estimating the severity of OSA.

For many, POCUS has become their reliable and sophisticated 'stethoscope'. Nevertheless, it is still a giant boulder blocking its way for some. We hope that with more awareness, airway POCUS will assume a more prominent role in the future.

REFERENCES

1. Haskins SC, Bronshteyn Y, Perlas A, El-Boghdadly K, Zimmerman J, Silva M, et al. American Society of Regional Anesthesia and Pain Medicine expert panel recommendations on point-of-care ultrasound education and training for regional anesthesiologists and pain physicians-part I: clinical indications. *Reg Anesth Pain Med.* 2021;**46**(12):1031-47
2. Husein M, Manoukian JJ, Platt R, Patenaude Y, Drouin S, Giguère C. Ultrasonography and videobronchoscopy to assess the subglottic diameter in the paediatric population: a first look. *J Otolaryngol.* 2002;**31**(4):220-6
3. Shibasaki M, Nakajima Y, Ishii S, Shimizu F, Shime N, Sessler DI. Prediction of pediatric endotracheal tube size by ultrasonography. *Anesthesiology.* 2010;**113**(4):819-24
4. Kim EJ, Kim SY, Kim WO, Kim H, Kil HK. Ultrasound measurement of subglottic diameter and an empirical formula for proper endotracheal tube fitting in children. *Acta Anaesthesiol Scand.* 2013;**57**(9):1124-30
5. Altun D, Orhan-Sungur M, Ali A, Özkan-Seyhan T, Sivrikoz N, Çamcı E. The role of ultrasound in appropriate endotracheal tube size selection in pediatric patients. *Paediatr Anaesth.* 2017;**27**(10):1015-20
6. Bae JY, Byon HJ, Han SS, Kim HS, Kim JT. Usefulness of ultrasound for selecting a correctly sized uncuffed tracheal tube for paediatric patients. *Anaesthesia.* 2011;**66**(11):994-8
7. Prasad A, Yu E, Wong DT, Karkhanis R, Gullane P, Chan VW. Comparison of sonography and computed tomography as imaging tools for assessment of airway structures. *J Ultrasound Med.* 2011;**30**(7):965-72
8. Lakhal K, Delplace X, Cottier JP, Tranquart F, Sauvagnac X, Mercier C, et al. The feasibility of ultrasound to assess subglottic diameter. *Anesth Analg.* 2007;**104**(3):611-4
9. Gottlieb M, Holladay D, Peksa GD. Ultrasonography for the Confirmation of Endotracheal Tube Intubation: A Systematic Review and Meta-Analysis. *Ann Emerg Med*. 2018;**72**(6):627-36
10. Ji C, Ni Q, Chen W. Diagnostic accuracy of radiology (CT, X-ray, US) for predicting difficult intubation in adults: A meta-analysis. *J Clin Anesth.* 2018;**45**:79-87
11. Sotoodehnia M, Rafiemanesh H, Mirfazaelian H, Safaie A, Baratloo A. Ultrasonography indicators for predicting difficult intubation: a systematic review and meta-analysis. *BMC Emerg Med.* 2021;**21**(1):76
12. Yao W, Wang B. Can tongue thickness measured by ultrasonography predict difficult tracheal intubation? *Br J Anaesth.* 2017;**118**(4):601-9
13. Fennessy P, Walsh B, Laffey JG, McCarthy KF, McCaul CL. Accuracy of pediatric cricothyroid membrane identification by digital palpation and implications for emergency front of neck access. *Paediatr Anaesth.* 2020;**30**(1):69-77
14. Price TM, McCoy EP. Emergency front of neck access in airway management. *BJA Educ.* 2019;**19**(8):246-53
15. Rai Y, You-Ten E, Zasso F, De Castro C, Ye XY, Siddiqui N. The role of ultrasound in front-of-neck access for cricothyroid membrane identification: A systematic review. *J Crit Care.* 2020;**60**:161-8
16. Hamilton CE, Su E, Tawfik D, Fernandez E, Veten A, Conlon T, et al. Assessment of Vocal Cord Motion Using Laryngeal Ultrasound in Children: A Systematic Review and Meta-Analysis. *Pediatr Crit Care Med.* 2021;**22**(10):e532-e9
17. Adi O, Sum KM, Ahmad AH, Wahab MA, Neri L, Panebianco N. Novel role of focused airway ultrasound in early airway assessment of suspected laryngeal trauma. *Ultrasound J.* 2020;**12**(1):37
18. Samprathi M, Baranwal AK, Gupta PK, Jayashree M. Pre-extubation ultrasonographic measurement of intracricoid peritubal free space: A pilot study to predict post-extubation airway obstruction in children. *Int J Pediatr Otorhinolaryngol.* 2020;**138**:110348
19. El Amrousy D, Elkashlan M, Elshmaa N, Ragab A. Ultrasound-Guided Laryngeal Air Column Width Difference as a New Predictor for Postextubation Stridor in Children. *Crit Care Med.* 2018;**46**(6):e496-e501
20. Singh M, Tuteja A, Wong DT, Goel A, Trivedi A, Tomlinson G, et al. Point-of-Care Ultrasound for Obstructive Sleep Apnea Screening: Are We There Yet? A Systematic Review and Meta-analysis. *Anesth Analg.* 2019;**129**(6):1673-91
21. Chenkin J, McCartney CJ, Jelic T, Romano M, Heslop C, Bandiera G. Defining the learning curve of point-of-care ultrasound for confirming endotracheal tube placement by emergency physicians. *Crit Ultrasound J.* 2015;**7**(1):14
22. Osman A, Sum KM. Role of upper airway ultrasound in airway management. *J Intensive Care.* 2016;**4**:52

Money Never Sleeps Series, Episode 1: The Fundamentals

by Dr Abdul Jabbar Ismail
Universiti Malaysia Sabah, Sabah, Malaysia

When we are young, we were taught that greed was wrong. Many religions even regard it as a cardinal sin. However, under specific circumstances, greed may be beneficial and has been theorised as the primary driver of societal progress globally.[1] This is a plausible theory since without some element of greed, there will not be proper motivation propelling progress in multiple aspects of life. In my honest opinion, it is only when greed is excessive and affects others unfairly that it should be considered a sin.

Gordon Gekko once said, "Greed is Good". In 2010, the portrayal of greed in chasing more money whilst breaking all rules by unjust means was depicted to perfection in the movie "Wall Street: Money Never Sleeps".[2] The movie is a sequel to a 1987 movie called "Wall Street" entailing the story of Gordon Gekko, an ex-stock broker convicted of financial fraud who returned to the financial markets by mentoring a young Jake Moore on the darker arts. The story encapsulates how greed, especially money, can become your best friend or an enemy engulfing life from all angles.

We can keep being in denial by saying money is not everything, but the hard truth is that money is the single most crucial factor that can directly affect every facet of our quality of life.[3] The creation of money is the greatest paradox in history, as money may directly destroy a person's life and family.[4] It also corrupts the best of men.

When we become doctors, we are passionate about learning, serving and improving ourselves by striving to be the best anaesthesiologist that we can be, and always regard money as something important yet never our only compass in life. But have you ever thought that you could breed and exponentially grow your hard-earned money? We work hard every day and night, saving lives barely sleeping to earn a reputable income so that our lives and our families improve, but how long can we keep this up? As the world's most famous investor of all time, Warren Buffet said, "If you don't find a way to make money while you sleep, you will work until you die".[5]

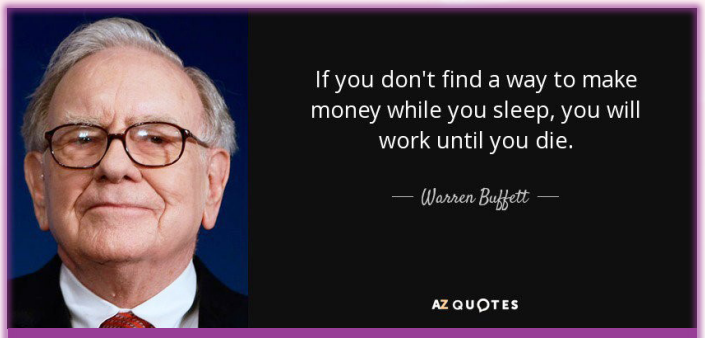


Figure 1: Warren Buffet's most famous quote

Making Money Work for You

Active income is an activity where you are paid money in exchange for your time.[6] Now your time is different in value compared to others. Some are being paid extraordinarily high for their services and time simply because it creates even higher value to the customer. Becoming a clinical specialist in your field demands a higher income for the time you spend giving your specialist service clinically. It is proportionate to the mix of the complexity of skillset, the risks involved and the responsibility that comes with it.

Passive income is when invested money produces even greater returns than just accruing interest from saving accounts.[6] But why can't we just keep our money in the bank? The notion of inflation eroding the value of our money is something that you may have come across before. The purchasing power of money traditionally dwindles with time which is the essence of inflation. You may recall being able to buy nasi lemak with 50 cents back in our schooling days compared to almost RM5 nowadays, a ten-fold increase roughly 30 years later. However, believing that you only need to invest all of your money to fight inflation is a sure path to failure.

Sort out your Personal Finances

The first rule of beginning your journey into passive income is to sort your personal finance management.[7] Prioritising a good monthly cash flow and getting rid of "bad" debts such as outstanding credit cards can be regarded as a consensus recommendation by personal finance advisors. There are a lot of techniques and methods to sort out your finances. You may engage with a licensed Certified Financial Planner (CFP), a professional individual, holding a licence regulated by Bank Negara Malaysia (BNM), to help you manage and streamline your personal finance management.[8]

For investments, no minimum amount of money is required, and you can start with as low as RM1,000. Then, you can slowly accumulate some funds to focus on beginning your investment journey. The golden investment rule is always use money that won't affect you or your family's daily life if it goes bust. It's not that we

intentionally want it to depreciate to zero. It's just that the financial market is a cruel cutthroat world where victims will not be spared at all.

Introduction to the Financial Market

The financial market can be broadly classified into primary and secondary markets. The primary market deals directly with financial instruments transacted between two parties, in a sea of daily transactions involving millions of market participants interconnecting global financial exchanges worldwide. The financial market will have a different terminology, depending on the underlying financial instrument. For example, the stock market is where the instruments are stocks or shares.[9] Buyers' money will go to the sellers' account in exchange for their shares going to the buyers' shares account. The distinction between stocks and shares is blurry. Generally, both words are used interchangeably to refer to financial equities, specifically, securities that denote ownership in a public company.

Another example of a primary market is the commodity market, where the financial instruments are basic commodities such as sugar, cocoa, coal, crude oil, cotton and coffee.[10] Commodity producers and wholesalers transact billions of dollars globally in complicated transactions involving future orders as both parties try to hedge favourable prices for them. Some examples of primary markets are the Foreign Exchange (Forex) Markets that transact exchanges of foreign currencies, Bonds and Money Markets deal with exchanges of debts, and the Cryptocurrency Market deals with cryptocurrency exchanges.

A cryptocurrency is an encrypted data string that denotes a unit of currency. It is monitored and organised by a peer-to-peer network called a blockchain which also serves as a secure ledger of transactions e.g., buying, selling, and transferring.

At the heart of each market is an entity that works to handle all these transactions called "Financial Exchanges". Bursa Malaysia is a company/business handling the Malaysian Stock Market, regulated under the watchful eyes of the Securities Commission of Malaysia to ensure the rights of traders and investors are protected. There are many Stock Market Exchanges around the world, namely the Singapore Stock Exchange (SGX), New York Stock Exchange (NYSE), NASDAQ, Hong Kong Stock Exchange (HKSE) and Shanghai Stock Exchange (SSE). The top three commodity market exchanges include Intercontinental Exchange (ICE), Chicago Mercantile Exchange (CME) and Tokyo Commodity Exchange (TOCOM).

Secondary Markets include Unit Trusts Investment; the most well-known in Malaysia is Amanah Saham Bumiputra (ASB). Other types of secondary markets such as pension schemes also exist, for example, the Employees' Provident Fund (EPF), Kumpulan Wang Awam Persaraan (KWAP) and the Private Retirement Scheme fund (PRS). The secondary markets work by investments into a pooled money scheme, which a fund manager will manage to create a reasonable return on investment (ROI).

Investing Do-It-Yourself. Is it Safe?

Investing in the current age is way better than around 20 years ago when information was scarce and registering for an investing account was difficult. Choices were also limited in terms of investment instrument selection. Nowadays, secondary markets are flourishing more than could be imagined a few decades ago. The exponential rise of these financial tools is not necessarily alarming although extreme cases of unregulated multi-layered derivatives resulted in a subprime crisis in 2008.

Regarding safety for investors, Malaysia is way ahead of even much bigger economies like the United States. The Securities Commission have played a significant role by being particularly strict regarding who and what entity will be managing your money in the secondary market.[11] For example, only licensed Fund Managers can legally procure funds and use them to the best of their knowledge and abilities to invest this pool of money.

Generally, there are three tiers of risks. My recommendation is to start with a risk-free or low-risk investment first. Some risk-free investment options such as fixed deposits guarantee a small return of around 2-3%. Risk is zero so your money won't become negative if your decision backfires. You might be tempted to withdraw and move your EPF funds into Unit Trusts or Stock Markets. But this might not be a good idea as EPF is a risk-free investment where the government guarantees a minimum of 2.5% return yearly according to the law.[12] So, long-term it is an excellent fixed deposit for retirement as shown in their past two decades' returns. Other than fixed deposits and EPF, theoretically there are no other risk-free investments.

The next best low-risk investments are bonds and the sukuk market (sukuk = Islamic bonds), gold investment accounts and Amanah Saham Bumiputera. If you are Bumiputera, many certified personal finance professionals have recommended maximising an ASB account of RM 200,000 first before moving on to other instruments. You may want to err on the side of caution as the days of high-flying returns are practically over, and ASB are not

obliged legally to provide you with any returns if their investments turn sour.

Previously, only high net-worth individuals could buy and trade bonds and sukuk, which comes at a minimum purchase of RM250,000 per transaction. In the last decade, the trends to allow retailers (retailers = small individual investors like most of us) to purchase bonds and Sukuk are growing. Currently, two companies enabling this option are Bursa Malaysia and FSM One Sdn Bhd. Simply put, bonds/Sukuk are a type of debt securities where a company procures a large amount of money from investors (instead of loans from a bank) and promises to pay a fixed pre-determined amount of coupons (coupon = dividends in the bond market) based on the number of units owned by the investor.[13] The price

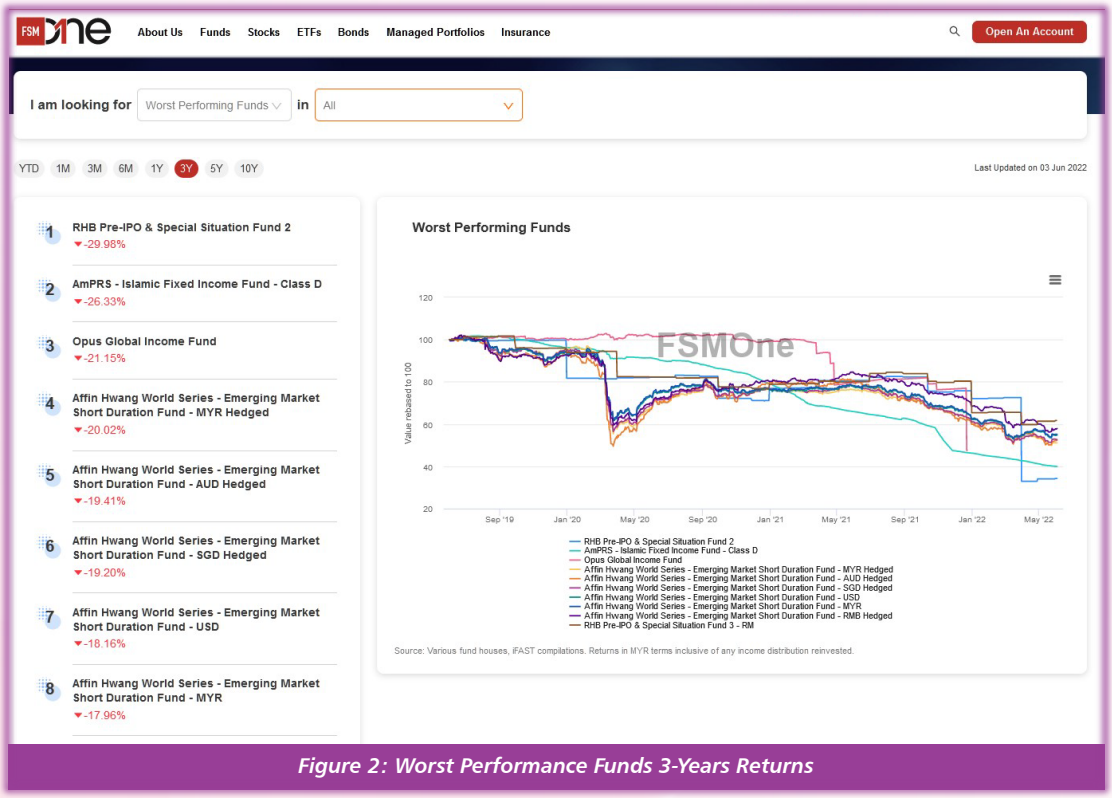


Figure 2: Worst Performance Funds 3-Years Returns

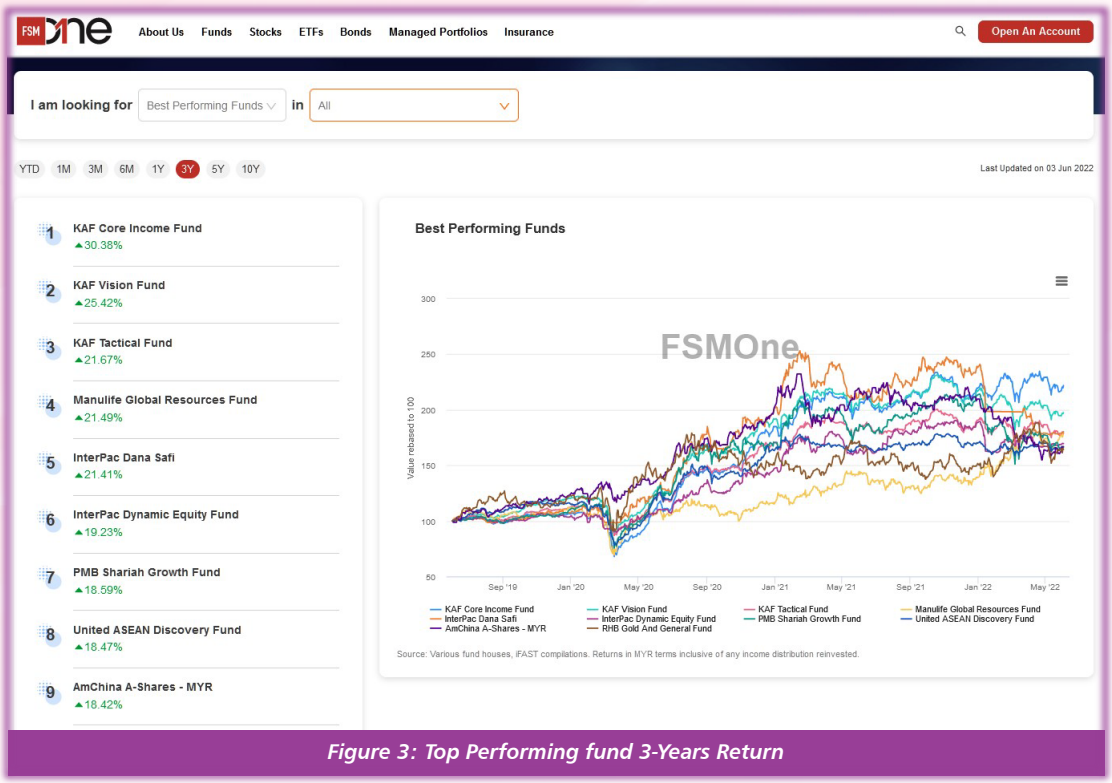


Figure 3: Top Performing fund 3-Years Return

of bonds will fluctuate according to the demand for ownership of the bonds.

After a set amount of time, the principal money "loaned" to the company will be returned to the investors. For example, if you buy 100 units of Dana Infra Sukuk on Bursa Malaysia for RM 1000 per unit, with a coupon rate of RM5 per unit, you will receive RM500 "dividends" from Dana Infra and the RM 10,000 will be returned to you at the end of 10 years. Between the initial investment and final payout, the price per unit may drop temporarily or the percentage coupon yield may increase.

As for Fixed Deposits (FD), it is incredibly straightforward; an application can be made online using official applications supplied by banks offering the service. Considered a safe haven compared to other investment types, a FD is a popular choice for many first-time investors. It guarantees a high return, easy to manage, rewards loyalty, and is protected by government insurance. Unlike a conventional savings account that earns daily interest and allows for withdrawals at any time, an FD restricts access to money you have invested. No interest will be paid out for a fixed deposit if you withdraw just one sen before the maturity date.

Fund Managers: Are they any good?

Managing other people's money into profit is not easy. It requires skills, knowledge, wisdom, and control of emotions. Most importantly, a solid investment strategy with a proven system has been shown to directly increase the odds of success. Nevertheless, the performance of private companies' unit trusts is disappointing. For example, a simple search using FSMone's Website Portal[14] while writing this article in early June showed, within 3-years' time, some funds suffered a -30% loss. However, even if we applied the best performance filter, it is only a maximum of +30% over three years. The long-term predictions are not very encouraging as well, where the highest performing fund is only projected to offer a 15% return.

REITs: A Class on its own

In my previous column (Volume 31 March 2022), I have written in length on investing in REITs as a prequel to this Money Never Sleeps Series.[15] Personally, it is one of my favourite investment instruments as REITs can be considered as moderate risk, where it provides reasonably high returns on a relatively low to moderate risk. As per the usual property investment theories, its profitability depends on market demand for rental, the feasibility of rental increment, the economic health of the lessee, competition from other entities and other unforeseen circumstances that may affect the ROIs. In any case, REITs should be regarded as a must-have in your portfolio to generate a reliable passive income.

Investing: Levelling up your Game

Once you are comfortable moving to the next tier of investing class, you may do so by registering a Share Trading account with any of the investment banking or brokerage firms. There's an abundance of free information available on the internet, ranging from international to local professionals discussing many investment modalities. It is better to start exploring the local stock market by opening an account and learning how to add money, purchase stocks, receive dividends and so on. Learning the mechanisms of how the stock market works, the fees involved and the risks you will face are equally important as trying to learn to pick a winning stock.

The stock market is suitable for all types of people and more awareness should be made available to ordinary people, anaesthesiologists included. There are no good or bad strategies, only profits or losses. Generally, in terms of strategy, it is broadly classified into two activities: Trading and Investing. These two genres of market participants ply their trades with different timelines and risks involved but with the same goals of churning profits.

Trading is typically associated with the intention to buy at a low price and sell high, thus earning a profit. You can also make money by selling first at a high price and buying back at a lower price when the share prices fall, but to explain this is beyond the scope of this episode.

On the other hand, investing is buying a share intending to keep it for a sustained period, usually around 5-6 years. One can reap dividends yearly while amassing capital appreciation before selling or keeping it indefinitely. Dividends that increase yearly still holds true; some investors gain about 50% dividends annually and reap very high capital gains over decades.

Failure is the highway to success. Tom Watson Sr. said, "If you want to succeed, double your failure rate". If you study history, you will find that all success stories are also stories of great failures. But people don't see the failures. They only see one side of the picture and say that person got lucky: "He must have been at the right place at the right time". Investing in the stock markets is the same, as it is considered high risk for failure but also promises the highest returns possible in terms of profit percentage. Is it possible to dabble in it ourselves? The answer is yes; it is doable and achievable, although it is a daunting task, just like facing our professors during the viva voce of the final M.Med Anaesthesia exams.

Setting a Reasonable Goal

A common mistake by typical retail investors is not setting up an achievable reasonable goal within an adequate timeframe. Failure to set this at the beginning will result in an investment strategy without a clear direction. At a minimum, investors should aim to, at least, target investment returns to overcome yearly inflation rates projected at 4% for the year 2022.[16] As long as the goals have been established and are within reasonable means, investors should be calm and remain invested. Although against many long-term investing principles, withdrawing the funds may be the right thing to do, especially if the targeted duration and amount have been achieved. Investors can always re-invest the money to achieve the subsequent year's target whenever feasible.

Conclusion: Conservative Investors Sleep Well

Perhaps the best conclusion in our quest to make money work while you sleep is to ensure that we, as investors, sleep well while money is working for us. "Conservative Investors Sleeps Well", this mantra was popularised by a book of the same name, published back in 1975 by legendary investor Philip Fisher. He discussed in great length why it is essential to understand our own investment strategies and principles with a reasonable goal and an adequately long investment time frame, with the ultimate aim not to have sleepless nights checking the price of our shares or unit trust three to four times a day. I bought this book about five years ago and it has been my pick as the best reading of an investment book by far.

In subsequent articles in the Berita Anestesiologi, I will elaborate in more detail on specific strategies on how we can make money work for us while we sleep well, specifically in November 2022: "Money Never Sleeps Episode 2: Dividend Investing in Stock Market".

"I will tell you how to become rich. Close the doors. Be fearful when others are greedy. Be greedy when others are fearful." - Warren Buffett

REFERENCES

1. Verburg, R., THE RISE OF GREED IN EARLY ECONOMIC THOUGHT: FROM DEADLY SIN TO SOCIAL BENEFIT. *Journal of the History of Economic Thought*, 2012;**34**(4):p.515-539
2. Cox, D., Wall Street: Money Never Sleeps unwittingly reveals why greed is good. The Guardian, 2010
3. Luburić, R. and N. Fabris, Money and the Quality of Life. *Journal of Central Banking Theory and Practice*, 2017;**6**(3):p.17-34
4. Gino, F. and C. Mogilner, Time, money, and morality. *Psychol Sci*, 2014;**25**(2):p.414-21
5. Houston, M. Passive Income And Why You Need To Know About It. 2021; Available from: https://www.forbes.com/sites/melissahouston/2021/07/07/passive-income-and-why-you-need-to-know-about-it/?sh=18000eaabeda
6. Rohde, J. The Differences Between Passive Income and Active Income. 2022 [cited 2022 8th June]; Available from: https://learn.roofstock.com/blog/passive-income-vs-active-income
7. Yusof, H., Personal financial planning and family financial investment. 2016, Lincoln University College Malaysia Academia.edu
8. Malaysia, BN. The importance of Financial Stability. [cited 2022 8th June]; Available from: https://www.bnm.gov.my/the-importance-of-financial-stability
9. Malaysia, B. Main Market. 2022; Available from: https://www.bursamalaysia.com/trade/market/securities_market/main_market
10. Exchange, CM Agricultural Futures and Options. 2022; Available from: https://www.cmegroup.com/markets/agriculture.html
11. Malaysia, SC. About The SC. 2022; Available from: https://www.sc.com.my/about/about-the-sc
12. TheRinggitPlusTeam. Historical EPF Dividend Rates. 2022; Available from: https://ringgitplus.com/en/blog/personal-finance-news/historical-epf-dividend-rates.html
13. BIXmalaysia. Bonds & Sukuk Information Exchange: Glossary. 2022; Available from: https://www.bixmalaysia.com/learning-center/bond-glossary
14. Best and Worst Performers. 2022 [cited 2022 8th June]; Available from: https://www.fsmone.com.my/funds/tools/best-and-worst-performers
15. Anaesthesiology, M.S.o., in Berita Anestesiologi. 2022, Berita Anestesiologi: Malaysia; Online
16. Bernama, Malaysia's inflation rises 2.2 pct, food inflation up 4.0 pct in March 2022, in New Straits Time. 2022, New Straits Time: Malaysia; Online

Beyond 'No trace = wrong place' - The Complexity of Capnography and Endotracheal Tube Placement

by Dr Cheah Kean Seng
Tallaght University Hospital, Dublin, Ireland

Wallace Wattles, an American author once said, 'It is essential to have good tools, but it is also essential that the tools should be used in the right way'. This quote couldn't be more legit in describing our use of capnography in practice. The use of capnography is still far from universal and thorough understanding despite its first introduction in the United States in 1978. In one survey of 315 ICU units across the UK and Republic of Ireland, less than half (32% to be exact) actually committed to using capnography for intubation and monitoring patients on a ventilator.[1]

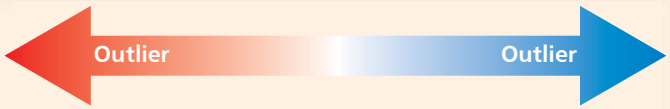
According to NAP4 Major Complications of Airway Management, the diagnosis of esophageal intubations was hampered by the lack of capnography use. In NAP4, nine cases of unrecognised oesophageal intubations were reported. All outcomes were poor, leading to six deaths and one irreversible brain damage.[2] It is also proven that clinicians, mostly anaesthetists, repeatedly failed to recognise that flat capnography indicates an absence of ventilation or a misplaced endotracheal tube. Zero trace capnography is often misinterpreted as the consequence of cardiac arrest which is incorrect. When the ET tube is in the correct position with the presence of ventilation, the high CO^2 in the pulmonary circulation will continue to diffuse, producing a low trace (4mmHg), unlike the totally zero traces seen in oesophageal intubation.

In the past, capnography was believed to be unable to accurately confirm the ET tube placement due to low CO^2 diffusion in low cardiac output states, like during cardiac arrest. This statement can be true with the use of colourimetric CO^2 devices due to the low sensitivity of colour changes in low CO^2 concentrations. However, replacing colourimetric with waveform capnography changes the situation completely. Waveform capnography has high sensitivity and specificity in the detection of esophageal intubation.[3] The 2010 International Consensus Guidelines on Cardiopulmonary Resuscitation specifically mentioned using capnograph to confirm advanced airway placement during CPR.

Since then, the Royal College of Anaesthetists and Difficult Airway Society launched the campaign 'No trace = wrong place' to remind resuscitationist to recheck the tube placement to prevent oesophageal intubation undetected for long periods and delay in correction leading to death.

A recent article[4] by Dr Pandit is particularly interesting. The author highlights the logical fallancy of reversing the slogan 'No trace = wrong place'. Truth be told, 'No trace = wrong place' is a contra-negative statement. Assuming that 'if not A = not B' does not validate 'if A = B' true. This can relate to 'Positive trace does not always mean right place' as there are ambiguous outliers.

What are the outliers that the tube can be in 'right place but no trace', or 'wrong place but with trace'?



Positive trace + wrong place	No trace + wrong place	No trace + right place
• Tracheal accordion • Tube migration /displacement (distally or proximally) • False-positive secondary to carbonated drink in esophageal intubation	• Esophageal intubation	• Faulty capnography • Massive tracheo-esophageal fistula • Bronchopleural fistula • Cardiopulmonary bypass • Tube blockage • Tube leakage • Neonatal ventilation

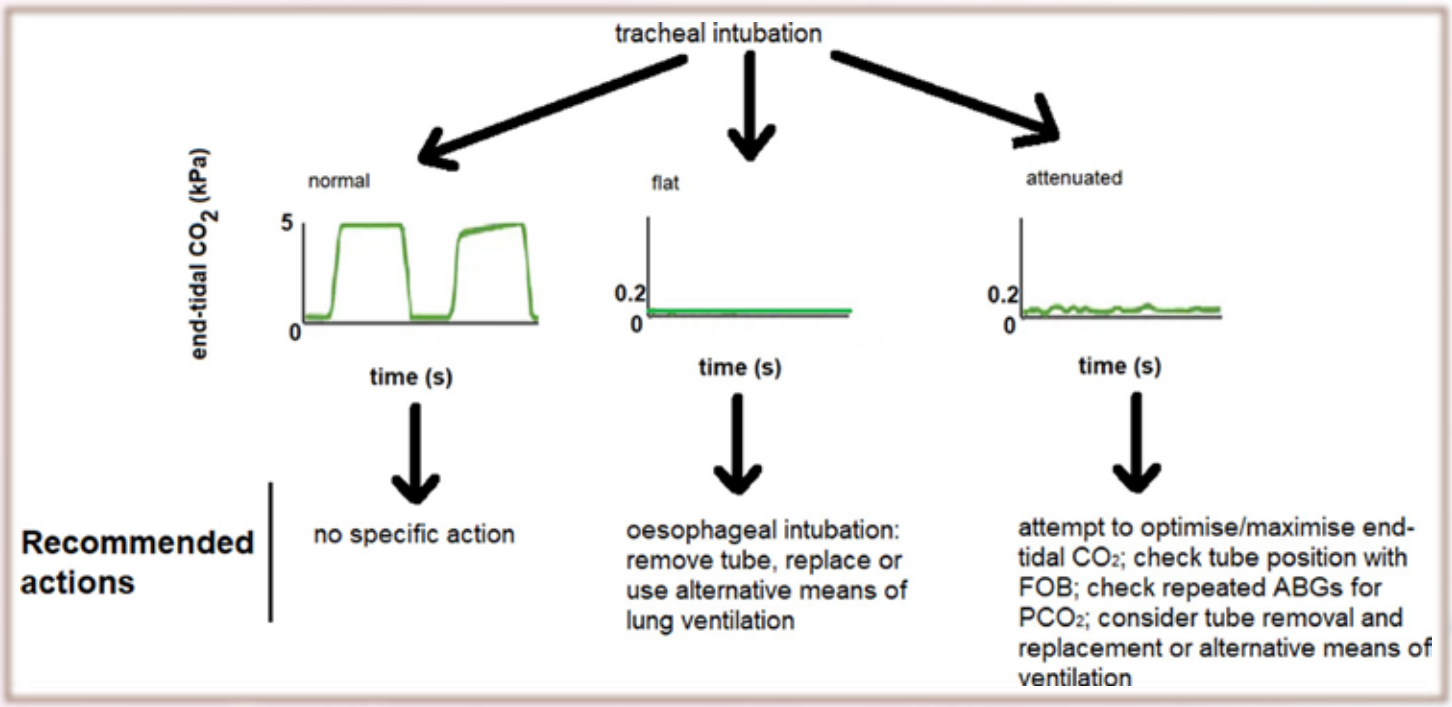
Figure 1: Two scenarios shifting away from the commonly seen 'No trace + wrong place' situation (white column). The rightward shift leads to the causes of 'No trace' (blue outlier). The leftward shift leads to 'Wrong place' category (red outlier)

Dr Pandit further explained that correct placement could be defined anatomically (tracheal vs non-tracheal) or physiologically (alveolar ventilation vs non-ventilation). An anatomically 'correct' placement could be physiologically 'wrong 'if without alveolar ventilation (such as tracheo-oesophageal fistula or inadequate tidal volume generation). This condition together with faulty capnography, tube blockage or leakage will fall under the blue outlier umbrella in Figure 1.

Esophageal intubation can also fall under the scenario of 'positive trace + wrong place' (red outlier) by a false positive capnography if a recent carbonated drink was ingested before intubation. No one can quantify the amount of carbonated drink that needs to be ingested to produce a false positive result but it was reported in a trial of high sensitivity of capnometer to detect $ETCO^2$ after a carbonated drink was 100% (cuff tube) and 67% (cuff + uncuff tube).[5]

A displaced ET tube either too deep into endobronchial or too shallow in the upper airway could produce a trace despite being in the wrong position. Endobronchial intubation will result in a biphasic capnography wave, whereas an ET tube situated in the upper airway in a

spontaneously breathing patient could produce a minimal trace of $ETCO^2$ as well. Tube migration is common especially during chest compression despite a well-secured ET tube, although a tube holder fixation method reported less shift than other types of fixation (durapore/multipore) in one study.[6] Despite a tightly secured ET tube, the tube's position in the trachea could still change due to the trachea's physiological 'to and fro' movement. Herway and Benumof described this as a 'tracheal accordion'.[7] Tracheal accordion occurs due to dynamic changes (anaesthesia, Trendelenburg position, during CPR), causing the trachea to behave like the musical instrument accordion, increasing and decreasing its length eventually altering the tube's position. This might play a role although its significance remains unclear.



The suspension of NHS to include unintended esophageal intubation in 'Near event' occurred due to the concern raised by the British Association of Perinatal Medicine (BAPM). Waveform capnography is not a standard of care in intubated neonates partly due to uncuff ET tubes. In contrast to cuffed ET tubes, the expiration of CO^2 usually occurs along the side of the uncuffed tube and not through it, making detecting $ETCO^2$ complex. Administration of surfactant in preterm neonates could obstruct the outflow of CO^2. Therefore an initial flat capnography is commonly seen in neonates and can be misinterpreted as displacement. The RCUK Newborn Life Support (NLS)[8] and Advanced Resuscitation of the Newborn Infant (ARNI)[9] courses currently recommend $ETCO^2$ detection rather than waveform capnography. An updated version is due to be published soon.

In summary, the association between capnography and ET tube placement may sound complex, yet it does not contradict the simple slogan of 'No trace = wrong place' because awareness of this often leads to timely correction of mistakes that can save lives and change patient's outcome entirely.

REFERENCES

1. Georgiou AP, Gouldson S, Amphlett AM. *Anaesthesia*. 2010 May;**65**(5):462-7
2. Cook, TM, Woodall, N, Frerk et al. Royal College of Anaes. London; 2011
3. Silvestri S, Ladde JG, Brown JF et. *Resuscitation*. 2017 Jun;**115**:192-198
4. Pandit JJ. *Anaesthesia*. 2022 Jan;**77**(1):16-21
5. Keller WR, Biehler J, Linares MY et al. *Paediatr Emerg Care*. 2009 Feb;**25**(2):69-73
6. Komasawa N, Fujiwara S, Miyazaki S et al. *J Emerg Med*. 2015 Feb;**48**(2):241-6
7. Herway ST, Benumof JL. *Anaesth Intensive Care*. 2017 Mar;**45**(2):177-188
8. Resuscitation Council (UK). Newborn life support (4th edn.)
9. Resuscitation Council (UK). Advanced resuscitation of the newborn infant

Motherhood and Medicine: Subspeciality Fellowship Experience at The Women's, Melbourne

by Dr S Praveena Seevaunnatum
Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

Two words that resonate clearly to me: motherhood and medicine. It is difficult to put in words clearly the impact of being a doctor and raising children; or even being a mother and what impact that has on my medical career. But I found myself in July of 2021, signing up to embark on a journey of becoming an obstetric anaesthesiologist.

What makes an obstetric anaesthesiologist?

It is a pursuit of excellence over three years of anaesthetising the vast population of pregnant women with their disease specific illnesses. This is the requirement set up by the Ministry of Health, with the first year of the programme conducted locally followed by a year abroad and then, a final year of distant supervision from a permanent place of practise.

Being a mom to a cheerful 6 and 3 year old has changed my perspective completely, both as an anaesthesiologist and as a person. I constantly feel that there is a need to champion and advocate for safe deliveries and experiences for new mothers. As an anaesthesiologist from University Sains Malaysia, Kelantan, I realised the need for women of my state to have better access to obstetric anaesthetic services. The lack of such trained personnel in the entire state to help high risk deliveries and set up tertiary care obstetric anaesthetics services in a public hospital sparked my interest to take up this subspeciality.

How did I obtain my overseas subspeciality fellowship?

My overseas subspeciality fellowship was supposed to start by July 2021 as per MOH training requirement. To make the timeline, my journey of sending various emails to obstetric anaesthesiologists worldwide started in January 2020. During my maternity leave, amid breastfeeding my then four month old daughter, I sent many e-mails with attached CV expressing my keen interest to join and learn from experts of the field. Till date, I am still surprised to read a long response from Dr Phil Popham, an esteemed principal editor from the International Journal of Obstetric Anaesthesia. His e-mail entailed rigorous demands of an incredibly competitive fellowship post at the Royal Women's Hospital, so historical in the city of Melbourne that its simply known as The Women's. The fellowship post was only possible if I passed an interview by a panel set up by the hospital.

Dr Ginette Falcone (consultant obstetric anaesthetist) and myself

By June 2020, I was nervously pacing around my department as I waited for a long-distance call from The Women's. It was an almost 30-minute call with my current supervisor Dr Nam Le. The interview was thorough with questions covering anaesthetic practices and experience on ethical dilemmas. The light at the end of the conversation was perhaps explaining very truthfully the needs of the women of Kelantan to have access to a trained obstetric anaesthesiologist. The pride I felt as I explained the resilience and the indomitable strength of the beautiful Kelantanese women, I, as a mother, would love nothing than to serve them better through obstetric anaesthetics.

Surrounded by my 2 daughters Dhanya (left) and Keerthi (right) in Australian bushland during autumn

After successfully gaining my subspeciality fellowship post at The Women's for 2021, a lot of the paperwork began. There were the countless administrative paper chases that needed to be completed. I needed my medical qualification verified by ECFMG which is basically an independent body that verifies foreign medical qualifications. I also needed to sit for an English proficiency test by taking the IELTS. It took me two attempts to fulfil the IELTS requirements set up by AHPRA. My personal take on this was the false assumption that as doctors we were already fairly good at English and needed no practice.

How was the journey to Melbourne during peak COVID times?

Fast forward to July 2021, my family of four including my husband flew to Melbourne at the peak of COVID-19 pandemic. It was next to impossible to obtain flight tickets travelling as a family to Melbourne due to limited quarantine spots in the city. Alternatively, we flew to Brisbane, a mere 1700km away from Melbourne, to start our mandatory 14-day hotel quarantine. A challenging experience no less to quarantine in a new country but it proved to be a nice staycation for our family to bond together. The fear of any of us contracting COVID-19 did loom at the back of our minds but, thankfully, we had a smooth experience and were released from an unscathed enroute to Melbourne.

Fellow's Dinner given for supervisor Dr Nam Le (far left) with 4 of the 6 fellows during this current term 2022

THE WOMEN'S, MELBOURNE

In everything we do, we value Courage, Passion, Discovery, Respect. That is the tagline of The Women's and at 150 years old, it boasts as the first surviving public hospital that has provided specialist care for women and new-born babies. Previously, it was known as the 'Melbourne Lying-In Hospital and Infirmary for Diseases of Women and Children' with the primary aim of attending to the poorest and most needy women in 1856, about two decades after the foundation of Melbourne in the gold rush era.

Since 2008, The Women's is housed in a 250-million-dollar facility in Parkville as part of the hospital precinct which includes Royal Melbourne Hospital, Peter MacCallum Cancer Centre, and The Royal Children's Hospital. This hospital delivered about 8879 babies in 2021, and had an approximate 42% rate of vaginal births with an epidural on board and 37% Caesarean rate.

Currently, this hospital provides the maternity care for specialist maternity services for high-risk pregnancies, oncology services for breast, cervical dysplasia and gynae-oncology patients, specialist gynaecology services including reproductive services, neonatal care with new-born intensive and special care nurseries and mental health support for women from diverse and disadvantaged groups.

As part of The Women's Anaesthetic Unit that has 41 consultants, 6 fellows and 7 registrars, care is provided via 7 operating theatres, 20 birthing suites and 4-bedded Complex Care Unit. Any escalation of care needing an ICU bed was sent next door to Royal Melbourne Hospital. The birth suite is equipped with negative pressure to cope with COVID positive parturient and facilities for a water birth experience as well.

From left with Dr Nam Le (supervisor and chair Victorian of regional committee ANZCA), myself, Dr Phil Popham (consultant and editor of IJOA) and Dr Andrew Buettner (Director of Anaesthesia, Women's)

The experience

I had the pleasure of working with most of the obstetric anaesthesiologists during my one-year experience. It helped me to hone my clinical skills as I dealt with the

obese parturient or severe placenta adhesive disorders and complex gynae-oncology cases that required meticulous planning, multidisciplinary discussions, and precision execution. The birthing suite constantly hums with emergencies or epidural requests regardless of time. The challenging parturient perhaps needs an ultrasound over her back before an epidural is placed. Access to one-to-one teaching with the consultants is truly easy to obtain to learn finer tips at such specialised procedures.

Teaching occurs weekly with the registrars and followed by the fellows' sessions once a month. As a fellow, I could attend both. What was most interesting to me, however, were the monthly run Panacea sessions. Panacea sessions starts with a pre-session survey and then a 20-minute literature review regarding a common anaesthetic practice followed by a 40-minute discussion regarding preferred clinical practice by obstetric anaesthesiologists and their reasoning behind it. Topics range from preferred volume of blood in epidural blood patch, regional anaesthetics in septic parturient or even the value of antenatal spine ultrasounds to replace preprocedural ones. The preparation that goes into setting up topics to its final execution via Zoom was akin to defending a viva in final exam. As a clinical lecturer in a public university, it was an eye-opener to see how closely my supervisor, Dr Nam Le, worked with me on the Panacea. He always took every opportunity to teach and add value to the project.

With consultant anaesthetists (from left) Dr Ainslie Murdoch, Dr Jack Wang, Dr Joey Coyne and Dr Kate Barrett

Support staff at The Women's also truly made my experience rewarding. As quoted by the resident obstetric anaesthesiologist, the ever-smiling Dr Ginette Falcone, 'Parturient are set up to clot physiologically'. When a woman bleeds from a massive postpartum haemorrhage in this hospital, every staff runs like a well-oiled machine to precisely deal with the bleed. Once Massive Transfusion is declared at a potential 1L loss, the consultant haematologist is on the phone giving consult on transfusion requirements, blood baskets appear in a jiffy, blood checking is seamless with bar code scanners in theatre and level 1 towers are set up immediately. Blood investigations such as FBC, coagulation profile and serum fibrinogen levels return with results in less than 10 minutes to guide transfusion practice. Amid the chaos, the midwife manages the anxious husband who will be ushered out to give the team time to resuscitate the parturient under a general anaesthetic. The husband, if agreeable, will be taught instead how to do skin-to-skin with the baby to improve the bonding experience.

How did I manage my daughters during the daunting fellowship?

The reason I address this personal topic as part of my fellowship experience is because role models are important. It is vital that our local trainees see other female counterparts that can do similar enriching overseas fellowships and bring their children on as part of that experience. At the time that we arrived in Melbourne, it went into one of world's strictest lockdown that saw the Trans-Tasman bubble being closed. My aunt from Christchurch who initially was supposed to help care for my girls while my husband continued his hand subspeciality was unable to come. This turn of events led my better half to defer his programme and stayed back in Melbourne for a couple of months. I did eventually book my aunt a seat on a charter flight organised with kind Kiwi strangers via Facebook to bring her over. Finally, once border restrictions eased with increasing vaccination rates, I had my lovely mother-in-law fly in like Mary Poppins to support us. While at times it did seem next to impossible to keep my girls with me, a circle of family, friends and faith have kept this Malaysian trainee dream of coming to Melbourne with her daughters entirely possible. I have had a life changing experience exploring this beautiful city with both my girls during all four of its seasons in the year. More than anything, it is the treasure trove of memories that we have created in this whirlwind adventure with the ardent hope that my little ones grow up to believe that as young women themselves that the sky is the limit and the world their oyster.

Day 1 of work at The Women's on a wintry August morning

Reclaiming My Life: From Fat to Fit

by Dr Amirul Azhar Zulkifli
Hospital Lahad Datu, Sabah, Malaysia

The Deep-Rooted Problem

I was the fat kid in class since I was in primary school. I always had to wear clothes that were two to three sizes bigger than average compared to my classmates. My excessive weight was due to the culmination of my poor eating habits, both quality and quantity wise. Fast food, fried food and sugary drinks were my favourites. Every time my parents brought this matter up for reminder and intervention, I would be displeased and retaliated. The situation got worse when I entered boarding school as my parents could no longer control my diet. I would buy extra food in addition to the food provided by the school. I always avoided physical activities at school. When I entered medical school, I started to dip my toes into sports activities for social reasons but, by that time, I was already morbidly obese with very limited physical capabilities and worsening eating habits.

The Untold Struggles

Life, as the cliché statement goes, is never easy but it is worse living life as a person with morbid obesity. My fitness was worse than an elderly person. I would get shortness of breath even at rest. I was diagnosed with hypertension, dyslipidemia and metabolic syndrome at a young age. To make it worse, I also had joint pains, back pain and numbness at the extremities which further impaired my physical activities.

My intellectual capabilities and cognitive functions were also affected which is most likely due to my severe obstructive sleep apnoea. I would be sleepy during the day and have trouble concentrating and memorising. Imagine going through medical school with that disadvantage. I also had multiple episodes of microsleep which was dangerous especially when I was behind the wheels. I still remember the terrifying accident when I was driving my mother, wife and newborn child. The microsleep happened and the next thing I knew my mother was shaking me awake while the car went on to the road divider. Fortunately, for all of us, we were fine but that could very well have turned out to be very catastrophic.

I might always seem cheerful, happy and confident but deep inside I was struggling. I learnt how to use jokes and humour as a defence mechanism and to be appealing to others. I definitely had inferiority complex which has caused me to sabotage several of my relationships and to hide my true self except to my close family and friends.

The Disappointing Failures

Ever since my medical student years, I knew that I have to do something about my weight issue but it always resulted in failures. I had tried a huge variety of methods from getting the premium gym membership, dabbling in ketogenic diet, intermittent fasting, meal replacements, fat burner, appetite suppressor, medications to inhibit fat absorption, even to the extent of downright starving myself. Every single time I would regain all my lost weight and, even worse, I would rebound to an even heavier weight than before. It was a nightmare and there were also traumatising experiences, to say the least. Looking back, the cause of all those failures were either because the methods themselves were wrong or I lacked discipline and willpower to be consistent.

The Game Changer

Despite all the difficulties, I was, and still am, blessed with supportive parents who always believed in me. They never for a moment lost hope in everything that I do no matter how hopeless things appeared to be. They are the reason that I can bounce back from every failure that I had in my life.

However, the game changer in my life has to be my wife. She married me at my worst, a morbidly obese man weighing 150kg (BMI 50) with severe obstructive sleep apnoea, metabolic syndrome, hypertension and dyslipidaemia… basically a ticking time bomb. My wife, Dr Ummul Hani Shahanom, is a Family Medicine trainee who is a big advocate on preventive medicine including combating obesity which is one of main risk factors of chronic diseases in Malaysia. She referred me to the University Kebangsaan Malaysia Medical Centre (UKMMC) Obesity and Metabolic Centre where I explored further the cause and extent of my obesity problem. After multiple physical and psychological assessments, I was suggested for surgical intervention which is bariatric surgery.

The Bariatric Journey

I have known about bariatric surgery since medical school but never have I considered the surgical intervention for

myself before. The stigma towards surgical management of morbid obesity runs even in the medical fraternity itself. We always think that bariatric surgery is a shortcut for obese people to lose weight. There is also this misconception about bariatric surgery and lifestyle modification. It is not mutually exclusive. On the contrary, the surgery is not a shortcut. Bariatric surgery is in a fact an aid to facilitate lifestyle modification for people with morbid obesity (BMI>40) or moderate obesity (BMI>35) with comorbidities such as diabetes mellitus, obstructive sleep apnoea and degenerative joint diseases such as osteoarthritis and prolapsed intervertebral disc. People with morbid obesity have a very stretched stomach that normal amounts of food will not be able to cause satiety, hence causing overeating and excess calorie intake leading to a vicious cycle. On the other hand, exercise can be detrimental to people with morbid obesity as the excess weight can lead to a much higher risk of injury.

I was referred to the Upper Gastrointestinal Surgical Department and was introduced to Associate Professor Dato' Dr Nik Ritza Kosai and Dr Mustafa Mohammed Taher. After thorough consideration and thinking, I decided to go through with the surgery as I felt that I needed to take a leap of faith to overcome my lifelong problem that has impacted all aspects of my life. Mr Mustafa was the surgeon who did my surgery back in April 2017 and assisted me with a comprehensive post-operative plan. The journey of weight loss after the surgery is not without sacrifice but it was much more tolerable than prior to the surgery. By two years after the surgery, I had lost a whopping 60 kg.

The Lifestyle Modification

Two years after the surgery, my weight was at 90kg. I was still obese but felt so much better than before. But, sadly, I started to be complacent and lazy. Despite the food volume restriction due to the surgery, I started to regain some weight as I allowed myself to eat high calorie dense foods and sugary drinks. I regained 10kg! It hit me hard when I realised that I was approaching 100kg again and I had exhausted the ultimate method. All the sacrifices I had made so far will be in vain if no intervention was made.

That was when I started a new mission, this time not just for weight loss but also fitness. This mission was intended to be for a lifetime, to return to the fundamental principle which was lifestyle modification. With my much lighter body, it was easier to control my diet and to start exercising. Since dietary modification should be something that I can practise for the rest of my life, I should not make it too restrictive according to all the popular diets nowadays such as intermittent fasting, One Meal A Day diet (OMAD), ketogenic diet, and etcetera. I went back to basics and ate healthily with an emphasis on low-calorie foods. I ate more protein and fibre with less fat and carbohydrates. I began to exercise as well as this was the second component of the lifestyle modification. I started with daily brisk walking for 30 minutes, 5 days a week. Then, as I slowly improved, I found that I could jog and ultimately I also began to run. I lost another 25kg since I started my fitness journey while also improving my cardiovascular fitness and muscle tone.

The Hungerless Weight Loss Diet

Always remember, 'One cannot outrun a bad diet'. Diet plays a bigger role in weight loss than exercise. The goal is simple, just eat less total calories per day than daily requirement. Do I keep track 100% on how much calorie I eat? No. That is not feasible for me, my life is busy enough with family and work, and I cannot micromanage my calorie balance. Just start by eating low-calorie dense food; food that has a lower number of calories for the same amount. Lean protein sources like chicken and fish along with vegetables and fruits have lower calorie content than fatty red meat and refined carbohydrates. A big bowl of chicken salad is more filling but less calories compared to a bowl of creamy pasta. Two pieces of egg sandwich is as filling as a cheeseburger but has fewer calories. Not a fan of western food? Don't worry, healthy food does not equal to western food. You can make a healthier choice for Malaysian food as well. A plate of nasi putih campur while applying the concept of '*suku suku separuh*' is better than a plate of *nasi/mee/kuey teow goreng*.

I no longer take unnecessary condiments like sauce and mayonnaise that contain high sugar and fat content and substitute with less-calorie condiments like greek yogurt and pesto. I resorted to plain water, sugarless coffee and used sweeteners like stevia to replace sugar in my drinks. You

say it does not taste as good? It is all about adaptability. We can do a palate reset where we take bland and tasteless food for a while, causing the natural taste of food to taste richer without the need for the extra taste that comes with more calories.

If I do not count the calories specifically, how do I monitor my progress? Basically, I weigh myself every day and take the median weight every 2 weeks as the current weight (I used the median because the daily weight will fluctuate a lot due to multiple factors such as water weight). If I am gaining weight, that means my calorie intake is in surplus, hence I will lower my intake. If I am losing too fast, then my calorie intake is way too low, so I will take more. Once I reach my ideal weight, I will try to keep it even as I am in the maintenance phase.

Low-calorie dense diet may seem hard to practise but it is much more sustainable because it does not require starvation. I am always full because these foods are very filling. Plus, I do not have to let go of carbohydrates totally which can be too restrictive, hard to be consistent and have the side effect of feeling sluggish and tired.

Does this mean I can no longer enjoy nice, tasty food? Totally not! When I practised a low-calorie dense diet in my daily meal, I already accumulated a lot of deficit. So occasionally, I should be able to enjoy the so-called cheat meal.

Run for My Life!

Physical activity, especially exercise, helps our body to lose weight effectively and efficiently. For weight loss specifically, cardio exercise is my choice. It is true that weightlifting for muscle building will increase our basal metabolic rate which helps our body use more energy at rest, but cardio is still the main exercise for weight loss. Plus, cardio exercise trains the most important muscle in our body, the heart. Choose any cardio exercise that you like, whether it is running, cycling, swimming, High-Intensity Interval Training (HIIT) or others. Running is the main exercise of my choice because I can run almost every day wherever and whenever I am, with very minimal cost.

Exercise should be incorporated into our daily life, especially when most of our jobs nowadays require less physical activity and are more sedentary. Which exercise to choose is up to you. There is no point in choosing the most efficient if you are only able to do it occasionally. **Consistency is the key**. When I am running, I am not running to race others, I am running to beat my old self, and keep improving over time.

The Brand New Me

It has been four years since the surgery and two years since my lifestyle overhaul. Alhamdulillah, I am now a 75kg man with a BMI of 24. I have much better stamina and improved cognitive function and mental health. No more sleep apnoea, hypertension, metabolic syndrome, and joint pains. I can practise medicine with better conscience as I can now walk my talk and set a good example to my patients. Running is a part of my hobby and eating a balanced low-calorie dense diet is my habit. I hope I can continue to be consistent in this journey for the rest of my life. As a human, I cannot determine how long I can live but I can try my best to improve my quality of life.

The Housemanship Experience in the Anaesthesia Department: Yay or Nay?

by Dr Priscilla Manymuthu
Hospital Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

"The first step in solving a problem is to recognise that it does exist" - Zig Ziglar

We have seen a recurrent theme in the media locally and internationally, this 2022. It includes "bullying" and "abuse". The alleged ill-treatment of junior doctors was highlighted in the first quarter of the year on various online portals, with an intense focus on doctors' mental health. On the global scene, the defamation suit by Johnny Depp against his ex-wife and his claims of being a male victim of domestic violence was upheld in favour of the A-list actor, even in the court of public opinion. These two incidents have brought about several discussions on the subject of abuse; including psychological, emotional, physical and sexual. Regardless of age, gender, and societal standing, anyone can experience personal and professional abuse.

Every fresh medical graduate fears the daunting years of housemanship. Most junior doctors are quickly introduced to the phrase of being "the lowest life form" in a hierarchical system upon graduation. Personally, getting through each rotation during those formative years without an extension was a cause for celebration, which many of us can relate to.

For more than ten years now, the Anaesthetic Department has been included as part of the House Officer training rotations. It is not mandatory, but it remains an option other than the Emergency Department posting. By the time these junior doctors reach our shores in the Department of Anaesthesiology and Intensive Care, they are regarded as senior housemen who have completed other compulsory rotations like Internal Medicine, Surgery, Orthopaedics, Paediatrics, Obstetrics and Gynaecology.

Over the years, having conversed with various house officers, I have always appreciated that most of them enjoyed their Anaesthesia posting. If the hospital were a film set, being in this department was more than playing a cameo appearance. While I cannot represent all house officers, I can certainly attest that many enjoyed this posting as they felt involved in the management of their patients. They were able to do more than just setting lines, diluting antibiotics and settling paperwork. They performed the 'coveted' procedures of intubating a patient and enjoyed other assisted procedures like invasive lines, induction and reversal of general anaesthesia, transport of the critically ill patient and even the basics of ultrasound technique for fluid assessment, cardiac function and vascular access. Simply put, it was an exhilarating four months of 'action' under close supervision.

In my casual discussions with many of these house officers, I have learnt that it is not the sleep deprivation, firm reprimanding, lack of sleep or loss of appetite that caused them to loathe certain experiences of their training. Most of them recounted harrowing tales of being disrespected including the use of profanities, public shaming and even sexual innuendos. Some of these comments were dismissed as "jokes", and those who could not accept them were deemed "weaklings" or "unexposed" or "sensitive millennials".

There was also a concept of "guilty until proven innocent" in certain departments. While it is imperative that junior colleagues earn trust by showing dedication to work, they must also be given the grace not to know certain things. Clinical medicine is far more expansive than our medical school exposure. Furthermore, there must be allowance for different learning curves. When feedback is due, it must be offered constructively. When correction is required, it must be relayed with firmness. Yes, we are dealing with lives and will have zero tolerance towards negligence. But that is not a reason to be belligerent or perpetually hostile towards a select few house officers who appear to fall "below par". On the contrary, they probably require more guidance than others rather than satire.

I am a firm believer in the ripple effect of change. Unless we collectively decide to transform some of our archaic practices, some things will not change. Every superior was once a "subordinate". While focussing on sharpening skills and knowledge in medicine, let us unite in our desire to inspire and imperialise our younger colleagues with extraordinary character.

With that, allow me to honour our anaesthesia colleagues for making a difference in the lives of house officers, one day at a time. As many of them will pass our doors before being released as medical officers, may they have an opportunity to consolidate knowledge, sharpen the necessary airway management skills, and gain a much-needed boost of confidence. We cannot 'right all the wrongs' of individual experiences, but we cannot discount the power of our influence.

"To be a positive influence in the world, simply impact one human being at a time".

The Journey of Our ERAS Team

by Dr Tan Lin Jun and Dr Serene Tan
Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia

The Enhanced Recovery After Surgery, also known as ERAS was developed in Europe to fine-tune perioperative care and improve recovery through research, education and implementation of evidence-based practice. It is a model of care introduced in 1997 by a group of general surgeons from Northern Europe led by Henrik Kehlet with a background experience in colorectal fast track surgery. In 2005, the ERAS study group published a protocol for colorectal surgery. They were officially registered as ERAS Society in 2010, a non-profit medical society based in Stockholm, Sweden. The first ERAS implementation program was also run in Sweden at Orebro University Hospital.

What is ERAS? ERAS is a multimodal perioperative care plan designed to achieve early recovery for patients undergoing major surgery. Medical advances have made us re-evaluate traditional practices, replacing them with evidence-based practices instead. Focusing on the concept of prehabilitation, the combination of physical training, nutrition supplements, and mental preparation for surgery has been shown to improve patient's recovery by reducing surgical stress and maintaining body homeostasis. This has dramatically changed patients' post-operative care status and shortened their stay in the hospital. The development of ERAS has been adapted across various subspecialties, including bariatric surgery, upper gastrointestinal surgery, hepatobiliary surgery, gynaecology, head and neck surgery, thoracic surgery, vascular surgery, and orthopaedic and cardiac surgery.

In 2017, following the success stories reported by the ERAS society, we in Johor started our journey. We formed a small ERAS team, led by a colorectal surgeon, Mr Chan Koon Khee, and our consultant anaesthesiologist, Dr Omar Sulaiman. We had an excursion to the Tan Tock Seng Hospital in Singapore, visited their operation theatre and consulted their ERAS team. We were amazed at how systematic and streamlined patient flow was from the surgical clinic to the physiotherapy clinic. They also have a specific ERAS booklet for patients to read and understand the procedures performed pre-hospitalisation, during hospitalisation, and after being discharged home. Utilising infusion pumps in the operation theatre also allowed a better calculation of fluid given to the patients perioperatively and aimed to achieve a zero balance at the end of surgery.

ERAS is a relatively new way of working with many challenges in its initial stages of implementation. Many disciplines are involved in order to make the entire journey as smooth as possible for all stakeholders. Multiple meetings were held with surgeons, physiotherapists, pharmacists, dietitians, and not to forget the most important alliance to keep the show running, our nurses, to discuss the flow of patients' prehospital, perioperative, and post-operative care. There were limitations in our resources back then as we were introducing a new concept in our hospital, for example, continuous preperitoneal local anaesthetic device, carbohydrate loading drinks, and intravenous paracetamol.

After gathering the information that we needed, we came out with our very own ERAS anaesthesia protocol under the guidance of Dr Tan Lin Jun in 2019 for colorectal surgery as a start. This protocol aims to reduce physiological stress and post-operative organ dysfunction through multimodal opioid-sparing analgesia intraoperatively. This also allows rapid awakening with minimal residual side effects. This paradigm shift towards more modern anaesthesia practices, namely opioid-free anaesthesia is combined with field analgesia and gives surprisingly good outcomes. Also, it emphasises zero fluid balance intraoperatively and aggressively manages postoperative nausea and vomiting, which reduces gastrointestinal and anastomotic complications, thus promoting early oral feeding and ambulation. Because it is still a relatively new and different way, continuous

education about ERAS is done for surgeons and our fellow anaesthesiologists and healthcare alliances involved. The contribution from all the relevant parties led to the success of this implementation.

Despite the apparent challenges of the pandemic, we were still able to cope with the implementation of our ERAS protocol into our elective colorectal surgery lists. We had several successful stories but, sadly, also downfalls in some. In 2019 - 2020, we had about 70 patients; most were ASA 2. Before ERAS, the readmission rate for complications was around 17%, which was reduced to 8.6% after ERAS implementation. ERAS has also boosted patient satisfaction outcomes and reduced the length of hospital stay.

After battling the pandemic, we were finally able to organise our first workshop, which turned into a one-day conference in the South on 8th January 2022. This conference mainly introduced ERAS and allowed us to share our knowledge and experiences to provide patients with the best recovery path. We had an unexpected turnout of about 150 eager participants. A welcome speech by Miss Tuan Nur, our state surgeon, kick-started the day. Next, a presentation by Miss Siti Fareeda on perioperative assessment and optimisation from the surgical side and a nutrition therapy talk by our dietician. Speaking of gastronomical delights, our participants enjoyed dining at the Harbour Café as it was exceptionally delicious, coupled with an environment that satisfied the palate and the soul.

One of the toughest challenges in implementing the ERAS programme was to coach the nurses and lay out detailed assignments that needed to be done, such as pre-hospitalisation counselling on TED stocking, bowel preparation, and stoma care. Preoperative medication optimisation and prehabilitation plays an essential role. Many anaesthetic modifications have been studied and implemented in ERAS. For example, we practise opioid-sparing anaesthesia, utilising regional anaesthesia and non-opioid based analgesia. Amid the COVID-19 pandemic, we still had about 60 colorectal cases for ERAS, 1/10 of them were given opioid-free anaesthesia, and the outcomes were extraordinary!

We also had exciting lectures from subspecialties that practise and apply the concept of ERAS, namely Upper Gastrointestinal Surgery and Hepatobiliary Surgery. Lastly, Dr Omar Sulaiman's powerful and explosive closing statements left us to wonder and ponder about the future of ERAS. At the end of the event, as gratitude for the support provided by our sponsors, we provided tokens of appreciation. Finally, the organising committee members said goodbye to one another after months of hard work, but not before the freestyle photography session.

"Towards enhanced recovery!".

Londonitis: My Top 10 Things to do in London

by Dr Aaron Wilson
Hospital Dutchess of Kent, Sandakan, Sabah, Malaysia

Finally, our international borders are open for travel! Thousands, if not millions of Malaysians have been waiting to pick up our red passports and use up our postponed air miles and take that trip we ever so deserve. On a personal note, I have been counting the days to fly back to London. For five years of my life during my undergraduate study at the University of London; London was once a place I called home. It was at this place that I experienced rapid personal growth and maturity. I developed a lot of fond memories and close friendships. Many of these friends, both local and international communities, also call London as home up to this very day. When I returned to Sabah upon completion of my undergraduate study, I still managed to keep in touch with a few of them throughout the years. Visiting London has somewhat become a 'biennial pilgrimage' for me these past years and every time I visited them in London, they have never failed to make me feel at home.

I was sad that COVID-19 had stalled my "balik kampung" plans though I am very grateful, I am near my family here in Sabah during this difficult time. Now that the pandemic waves have subsided (thanks to vaccination!), I can finally reconnect safely with this city once again in person.

The City of London is one of the most vibrant cities in the world. It is suffused with a plethora of cultural influences, histories and cuisines. Having studied there and visited the city quite a few times now, I would like to share my 10 top activities to do/places to visit in London!

1. Watch a Musical!

Are you a stage musical fan, or just plain curious what the buzz is all about? Then look no further than London's "West End". With an array of musical genres, ranging from musical 'classics' such as "Phantom of The Opera", "Les Miserables" and "The Lion King" to upbeat modern shows such as "Frozen", "Wicked", and "Harry Potter and the Half-blood Prince", you will be spoilt for choices! Typical run-time is 90-120 minutes long, and shows are (almost) available all year long. Get your tickets as early as possible to avoid disappointment, especially during peak season, whilst during the off-peak season, there are plenty of offers for the upper-range tickets, some up to 70% discount!

2. Explore the City on Foot

One of the best memories of visiting London was being able to wander to any corner of the city and still feel very safe. Trying to achieve your 10000 steps daily health target? This will be a cinch. Plenty of pedestrian-friendly paths as well as beautiful canals to explore. Moreover, there is always the crowd to keep you going from one end to the other. And when it's time to go back, there is always a reliable public transport connection. A good place to start is to walk along the River Thames, on each side of the river bank. Here you have the luxury of witnessing London's beautiful architecture, both its modern and traditional facades. There are plenty of free guided walks available too.

3. Shopping!

On the topic of walking and shopping, there are plenty of shopping areas to suit various budgets. There are the "high streets", and there are also the "shopping malls", Oxford Street, Regent Street, Westfield, and Harrods just to name a few. These places tend to be busy (dare I say, "crazy!") around festive periods and the summer season. Hoards of local and foreign shoppers will swarm there to enjoy the heavily discounted sales. If you happen to be around during boxing day (26th December annually), brace yourself as you are about to face the pandemonium of awfully/amazingly 'kiasu' shoppers swarming into the shops, as soon as the shops are open for business! For those who are into vintage items, Shoreditch and Camden market are must-visits!

4. Chill at Hyde Park

After a long day walking, why not take a break chilling at Hyde Park, London's largest park? Here, the lush greeneries are punctuated with well-maintained park facilities such as benches, toilets, pedestrian pathways, as well as lakes teeming with ducks and swans. Enjoy playing with plenty of friendly wild squirrels, and maybe even dogs (if their owners let you!). There are plenty of shades for those who wish to escape the bright summer sun, but equally much open-lawn space to lie on or have a picnic, even a game of football. There are also plenty of seats available (at a fee) to rest. Otherwise, you can even consider going for a run as Hyde Park spans across the city.

5. Take Iconic Pictures of Westminster

The Westminster section of London is proud to have three of the most instantly recognizable British landmarks - The Big Ben, Parliament Building, and Westminster Abbey. Another famous landmark here is the London Eye - London's very own ferris wheel.

6. Selfie at Tower Bridge

Any visit to London will not be complete without taking a picture at this famous landmark, so often mistakenly called the London Bridge. The actual London Bridge exists, but it is constantly overshadowed by the glorious neo-gothic designs and lifting central road sections of the Tower Bridge. Prepare to take multiple selfies there (with everyone else also doing the same, it is almost impossible to have a 'people-less' photo!). While you are there, check out the nearby Tower of London. While this fortress is currently famous for housing the Crown Jewels of England, it has served as an armoury, royal mint, royal residence, and prison.

7. Visit The Buckingham Palace

Revel in the royal splendour of one of the most famous and iconic palaces in the world. Be up and about in the early hours of the morning to secure the best view at Buckingham Palace for the procession of the change of guards that happens every morning. There is bound to be a massive crowd turnout. If you have the time, why not buy a ticket and take a tour of the palace. Otherwise, do walk down Pall Mall - the lane which the procession continues from Buckingham Palace right after the guard-change ceremony ends. The Queen's residential palace is in Windsor Castle, so unless there is a special occasion (such as the recent Jubilee celebration), you are highly unlikely to see Her Majesty in person.

8. Time Travel (almost)

On the world clock, you would probably have seen "Greenwich Mean Time" or simply "GMT". What if I tell you that there is a physical, visible line that represents GMT in London? This is located at Royal Observatory (also an excellent planetarium) in the quaint town of Greenwich, in East London. You quite literally stand between two time zones and the historic Prime Meridian Line of the World (mind blown!). Wait till nighttime to observe the spectacular green "GMT 0" beam cutting through the London skies. A sight to behold!

9. Visit museums

History lovers will be delighted that many of the London museums do not have admission fees, or rather very minimal charges. Learn about the rise and fall of ancient civilization history at the famous British Museum. One that is most memorable for me was the "Egyptian history" section where I could witness mummies and the sarcophagus. Next, explore the actual remnant of the ancient London Wall at the Museum of London. Interested to see dinosaur bones? Then head on to the Natural History Museum.

10. Medical 'Tour'

Well, this is a special treat for our fellow readers because it does not typically enter into the "Top 10" list. Visit the Anaesthesia Heritage Centre, just off Oxford Street (main shopping area), which has more than 2000 objects dated as far back as 1774. One should also visit St Bartholomew hospital. With its reputation as the oldest hospital in the world, be sure to enjoy interactive displays that transport you back to the 13th-century surgical era. If you wonder what surgery was like in the pre-anaesthetic era, then head to The Old Operating Theatre and Herb Garret. As with other London museums, admission is free!

The First, But Definitely Not The Last!

by Dr Zubaidah Zulkipeli
Hospital Tunku Azizah, Kuala Lumpur, Kuala Lumpur, Malaysia

Hats off to the multidisciplinary team from Hospital Tunku Azizah (HTA), Kuala Lumpur and Hospital Raja Permaisuri Bainun (HRPB), Ipoh for the first successful premature omphalopagus conjoint twins' separation on the 19th March 2022 in Hospital Tunku Azizah. The Anaesthesia team was led by Dr Intan Zarina Fakir Mohamed and Dr Ruwaida Isa, the Surgical team by Dato' Dr Zakaria Zahari and Dr Mughni Bahari and the Neonatal Intensive Care team consisted of Dr Neoh Siew Hong, Dr Elaine Wong and Dr Maneet Kaur a/p Ranjuth Singh.

This historical event had received nationwide attention including from the King and the Queen of Malaysia. Everyone in the country celebrated this success with gratitude. This accomplishment had proven that our health services are at par and surpassed the international standard.

The first conjoint twins' separation surgery happened back in 1981. However, this was the first premature twins' separation in Malaysia. To put perspective to the number of cases done in Malaysia, this conjoint twin's separation would be the 25th in Malaysia and 14th in Hospital Kuala Lumpur.

The twins were born at Hospital Raja Permaisuri Bainun (HRPB) in Ipoh at 33 weeks of gestation via emergency Caesarean section due to premature uterine contraction with the birth weight of 3kg. Diligency and early recognition of extrauterine twin-to-twin transfusion by the HRPB NICU team led to further discussion on the likelihood for the twins to undergo early separation. At day 13 of life, the twins were transferred to Hospital Tunku Azizah (HTA), Kuala Lumpur for the continuation of neonatal intensive care monitoring and for emergency separation if the need arises.

This conjoint twins' separation which is usually done between 3 to 6 months of age however had to be done earlier due to complications of cross transfusion that could endanger the life of the twins. At day 17 of life, these 2.7kg twins (named as Twin A and Twin B) underwent emergency separation without any major complications. The anaesthesia was started as early as 7.30am and both babies were sent back to NICU at 2.00pm.

Twin A was successfully extubated at day 7 post-operation without any major post-operative sequelae. Meanwhile, Twin B developed more severe complications such as cardiac failure and acute kidney injury which was successfully managed by the NICU team. Subsequently, Twin B was extubated at day 9 post-operation. Both little fighters eventually were discharged home to their loved ones.

From the anaesthetist's perspective, there was no doubt that it was a challenging and stressful period for us. The road may seem rough, but with multidisciplinary team discussion and planning, it became a smooth sailing operation. It was a really rewarding experience to be a part of the combined HTA and HRPB multidisciplinary team. Surely, it has been one of the best memories for those who were involved. Our warmest congratulations to HRPB team for their early detection of extrauterine twin-to-twin transfusion that ultimately allowed us to intervene early and save these babies by early separation.

Apart from that, we would like to highlight other milestones and achievements of the paediatric anaesthesia services in Hospital Tunku Azizah, Kuala Lumpur as follows;

i) Paediatric Living Related Liver Transplant Surgery apart from Selayang Hospital
ii) Conjoined Twins' Separation (one Omphalopagus and one Pygopagus in 2020)
iii) Ex-Utero Intrapartum Treatment (EXIT) for Fetus with Airway Abnormality.
iv) Off-Pump Congenital Heart Surgery (Patent Ductus Arteriosus Ligation and Co-arctation of Aorta Repair)
v) Paediatric Midface Advancement Surgery for Maxillary Hypoplasia
vi) Paediatric Laryngeal Reconstruction Surgery
vii) Paediatric Advance Epilepsy Surgery (Hemispherotomies, TPO Disconnection, Tuberectomy for smaller babies)

Further advancement of paediatric anaesthesia services in Malaysia has allowed more complex paediatric and neonatal surgical cases to be done with better outcomes. We are ready to move forward to meet the needs in the future.

"Hey little fighter, soon things will be brighter'

The anaesthetic and surgical team with the twin (in the incubator)

Operation theatre set up: Colour-coded equipment; two General Anaesthesia machines , monitor and warming devices

Early workout on Saturday morning...the journey was about to start...

Anaesthetists in action. Where were the tiny little twins?

The morning view...surgeons in action. Meanwhile, the Anaesthesia team was busy on the other side of the drapes.

Life Goes On: First Organ Procurement in Hospital Kajang

by Dr Noorazwati Ismail
Hospital Kajang, Selangor, Malaysia

"It takes lives to save lives" - Oscar Auliq-Ice

Historically, organ donation and transplantation have been in practice for more than 100 years. The first kidney donation was done in 1954 by Ronald Lee Herrick to his identical twin brother. The act of organ donation is a noble practice. It can save and improve the quality of life of people who are sick. A single donor can save as many as eight lives through organ donation, as well as improve the quality of life for up to 75 people through tissue donation.

In Malaysia, there are only 4 organs (kidneys, heart, liver, lungs) and 4 tissues (cornea/eyes, heart valve, bone, and skin) that can be donated.

On 7th May 2022, I was on-call after coming back from the Raya holidays. Everyone was still in the Raya mood. During the handover, my colleague informed us that there was a potential organ donor in the ward. The patient was a young man with a hypertensive intracranial bleed. The neurosurgery team had determined that conservative management was indicated. After being reviewed by the TOP team liaison officer for Hospital Kajang, Dr Hazimah, this patient was referred to our Intensive Care Unit for further management. The family members consented to organ donation as the patient had mentioned his wish to donate his kidneys if he were to pass away.

The on-call team was alerted and the case was informed to the head of department. All blood investigations were sent immediately by the TOP team from the ward as ordered by the National Transplant Resource Centre (NTRC) team. While waiting for the COVID-19 PCR result, an ICU bed needed to be organised as we did not have an empty physical empty bed. We managed to bring this patient to our ICU at around 4.30 pm. After inserting a central line and an arterial line, we worked on optimizing the patient as he had developed acute kidney injury. His urea and creatinine were significantly raised and urine output was decreasing in trend. Other parameters were normal and he was eligible for a brain death test. The radiology team was also called to perform an ultrasound of the kidneys and liver in the ICU.

I did the first brain death test at 6.00 pm with another physician, Dr Chong who was on-call that day. All tests fulfilled the criteria of brain death and we needed to repeat the test six hours later. A family conference was done and the first test result was informed. The family agreed to proceed with organ donation but they had a special request. They wanted the process of organ procurement to be settled before 9th May 2022 because they need to respect the patient's first son's birth date. They would not be able to bring a deceased's body into their house during a person's birthday.

It was a challenging task for me because I did not have any experience managing a brain-dead patient in ICU whilst also needing to preserve the patient's organ function. The patient's kidney function deteriorated and he developed metabolic acidosis. I had to consult a few friends and colleagues on how to manage a brain-dead patient in the ICU and during procurement. Initially, I thought it was not going to happen as the kidney function deteriorated slowly and the patient had become acidotic but the HKL nephrology team still thought that there was a chance.

The second brain death test was done in the middle of the night and later his death was pronounced at 12.30 am after all testing was positive for brain death. Another family conference was done and family members were allowed to visit and give him their last respects. Again, I thought the organ procurement could not be done because the kidney function was still poor and the liver team's surgeon could not make it in time. So, I went to bed. However, I got a message from Dr Hazimah at 2 am saying that organ procurement would be done early in the morning and they had decided to take only one kidney from this patient.

I was shocked hearing the news. This was going to be a history for Hospital Kajang, a small district hospital which never had any organ procurement done before. I felt honoured and proud to be in the team and to perform our first kidney procurement. The operation was led by Mr Ashani and assisted by Mr Tham, from the HKL Urology team. It was such a valuable experience for me, managing this case solo from the beginning until the end.

Without the donor, there is no story, no hope, no transplant. A few days later, we got a message from the transplant team that the kidney was successfully transplanted at another district hospital. The kidney function had improved and there was urine output from the recipient. No dialysis was needed. Alhamdulillah. Another good news for us as the procurement team.

Thank you Mr R. You are a hero to someone by donating your kidney. I respect his family members, especially his wife as they were so cooperative and helpful throughout the process. She looked very calm even when she needed to sign the consent. No tears at all. No regret. I was blown away by her kindness and strength.

Every successful story requires a first step. Well done to everyone who was involved in this process and made it run smoothly and successfully. I could not have done it without you. We were an inexperienced team handling an organ procurement, but the process became easier with good communication, cooperation, knowledge, and experience-sharing between the team members. Hopefully, more people will gladly donate their organs and insya Allah, we will be more prepared in the future.

Special Acknowledgement to Anaesthesia ICU and OT staff, Medical team, TOP team Radiology team, Pathology team, Forensic, Emergency Department from Hospital Kajang, and last but not least the National Transplant Resource Centre (NTRC), HKL.

Sarawak Regional Anaesthesia Workshop 2022

by Dr Valentine Lim Kim Yong and Dr Chan Weng Ken
Hospital Umum Sarawak, Sarawak, Malaysia

Two years of the COVID-19 pandemic have vastly improved our understanding of safety precautions in healthcare, especially in aerosol science, which includes modifying our anaesthetic technique to reduce the viral load during the aerosol-generating procedure (AGP). Adapting the NIOSH hierarchy of control (Figure 1), regional anaesthesia (RA) is an efficient administrative control method to reduce AGP. RA also serves to kill two birds with one stone, as it effectively deters chronic pain.

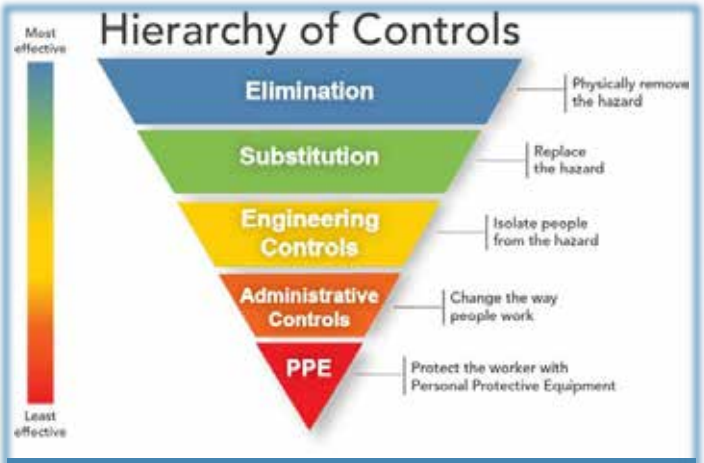


Figure 1: NIOSH Hierarchy of Control

After a three-year hiatus, we restarted our RA hybrid workshop at Sarawak General Hospital (SGH) on 18th March 2022. This workshop was organised by Persatuan Kakitangan Anesthesiology Hospital Umum Sarawak (PEKA-HUS) with the aid of G Medic Solution Sdn Bhd (GE), Cas Medix (Vygon) and B.Braun (Stimuplex).

Regional anaesthetists from Hospital Kuala Lumpur (HKL) and SGH were invited to Kuching to educate the young anaesthetic trainees on ultrasound-guided RA. The main objective was to impart knowledge and improve ultrasound-guided RA fundamentals of the participants. At the end of the workshop, we hope that participants can safely and competently perform basic regional blocks and be able to promote RA practice throughout hospitals in Sarawak.

Dr Ng Sze Teck pointed out a whole new world to the anaesthetic trainees during the practical session

We conducted the hybrid workshop to overcome the challenges of the COVID-19 pandemic and in compliance with the standard operating procedure. Twenty-nine participants from all over Sarawak and Kuala Lumpur attended physically, while another 96 participants attended via the virtual live platform (Zoom). We also had a pre-workshop session for specialists to promote the relatively modern and advanced blocks such as cervical plexus block, quadratus lumborum 3 (QL3), and paravertebral block. These advanced blocks added to the armamentarium of multimodal analgesia.

The workshop was officiated by Dr Teo Shu Ching, Head of the Department of Anaesthesiology and Intensive Care, SGH. A series of well-crafted lectures were delivered by Dr Mohd Fakhzan Bin Hassan (HKL), Dr Ng Sze Teck (HKL), and Dr Chan Weng Ken (SGH) which covered RA of the

trunk, upper limbs and lower limbs. The lectures comprised a wide range of fundamental topics covering applied anatomy, landmarks and sonoanatomy, ultrasound physics, preparation, adjuncts to local anaesthesia (LA), merits and demerits of different approaches, monitoring and complications. The lectures concluded with identifying and managing local anaesthetic systemic toxicity (LAST). To do no harm, "*primum non nocere*", we must be able to recognise the adverse effects and find ways to prevent complications. The series of lectures indeed was an eye-opener for the participants.

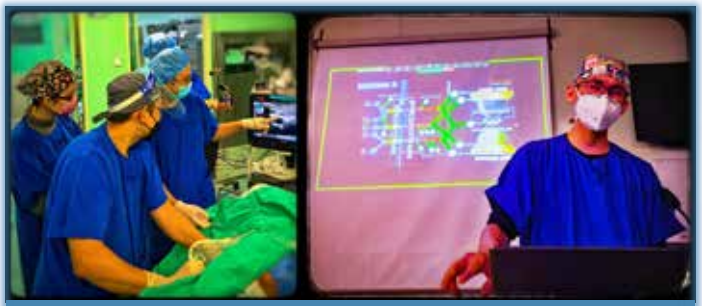
Anaesthetist performing advance block under Dr Ng Sze Teck's guidance

Practical session with Dr Ng Sze Teck - needling your way to the plane

The second day of the workshop was the long-awaited interactive practical session. The participants were divided into three groups, rotating around three stations. They were given the opportunity to perform various upper limb, lower limb, and truncal blocks on consented patients prepared for operation on the same day under supervision. The participants were also allowed to practise ultrasound techniques on volunteers, identify the sono-anatomy in detail, and perform needling skills on blue phantom models under the guidance of our lively facilitators.

Dr Fakhzan sharing his knowledge with junior anaesthetists

The two-day RA workshop closed with the presentation of a token of appreciation to our honoured speakers. We expressed our heartfelt gratitude to our invited speakers, Dr Mohd Fakhzan (HKL), Dr Ng Sze Teck (HKL), Dr Chan Weng Ken (SGH), our organising chairperson, Dr Muhammad Asraf (SGH), as well as operation theatre staff and the organising committee for their effort in making this workshop a huge success. The knowledge, experience, and skills passed down were highly appreciated and would benefit us in the long run.



No! That is not a railway network! That's your brachial plexus - XD - Lecture with Dr Chan Weng Ken

Let me conclude by quoting Professor Ban Tsui, "regional anaesthesia is business class pain management".[1] We hope that in the future, '*everyone can block*' and more patients will encounter a '*business class anaesthetic and postoperative analgesic experience*'. Last but not least, we would like to thank our sponsors - G Medic Solution Sdn Bhd (GE), Cas Medix (Vygon) and B.Braun (Stimuplex), for their aid in making this workshop possible.

Knowing the landmarks and sono-anatomy. Lecture with Dr Ng Sze Teck

Geared up and ready to perform the block. But wait, lecture first - Practical session with Dr Chan Weng Ken

Hands-on guidance by Dr Chan Weng Ken

That's where you should aim your needle - Dr Ng Sze Teck pointing at the sono-anatomy during one of his practice sessions

Token of appreciation to our dearest facilitators for all their hard work in making this workshop an unforgettable experience

REFERENCES

1. Tsui BC. Regional Anesthesia: Business Class Pain Management? *Regional Anesthesia & Pain Medicine* 2014;**39**:265-266. doi: 10.1097/AAP.0000000000000078

14th Paediatric Anaesthesia & Analgesia Workshop (PAAW) 2022 Kuantan "Safe Anaesthesia For Children"

by Dr Sivaraj Chandran
Hospital Tengku Ampuan Afzan, Kuantan, Malaysia

The Malaysian Society of Paediatric Anesthesiologists (MSPA) together with the Anaesthesiology Department of Hospital Tengku Ampuan Afzan (HTAA), Kuantan has successfully organised the 14th PAEDIATRIC ANAESTHESIA & ANALGESIA WORKSHOP (PAAW) 2022 KUANTAN on 28th and 29th May 2022. This event was held in the auditorium of Ambulatory Care Complex, Hospital Tengku Ampuan Afzan, Kuantan. This one-and-a-half day workshop comprised a series of lectures and updates pertaining to the field of paediatric anaesthesia. Apart from lectures, there were also "hands-on" sessions during live surgery. This face-to-face workshop was very much awaited by everyone as we were in "Virtual Mode" during the COVID-19 phase. The last 13th PAAW 2019 was held in Hospital Wanita dan Kanak-Kanak Kuala Lumpur 3 years ago. Thankfully as we are in the endemic phase, the organisers had an opportunity to resume organisation of the workshop.

The official opening ceremony was by Dr Rahimah binti Ibrahim, Hospital Director of HTAA. She congratulated the Organising Committee of PAAW Kuantan 2022 led by Dr Sivaraj Chandran and Team for their dedicated effort in organising this National PAAW 2022 for the very first time in Pahang. Others present in the opening ceremony was Dato' Dr Nor Khairiah Mohd Kenali, Head of Service for KKM Anaesthesia Services of Pahang, Dr Wan Marzuki, Head of Department of Anaesthesiology & Intensive Care, HTAA.

Our 14th PAAW 2022 Kuantan expert speakers consisted of:

1. Dr Hamidah binti Ismail, Head of Subspecialty Paediatric Anaesthesia KKM Programme
2. Dr Intan Zarina Fakir Mohamad, Consultant Paediatric Anaesthesiologist, Hospital Tunku Azizah Kuala Lumpur
3. Professor Dr Felicia Lim, Professor & Senior Consultant Paediatric Anaesthesiologist, Hospital UKM
4. Professor Dr Ina Ismiarti Shariffuddin, Professor & Consultant Paediatric Anaesthesiologist, University Malaya Medical Centre
5. Associate Professor Dr Rufinah Teo, Associate Professor & Consultant Paediatric Anaesthesiologist
6. Dr Sanah binti Mohtar, Consultant Paediatric Anaesthesiologist, Hospital Umum Sarawak
7. Dr Nur Hafiizhoh binti Abd Hamid, Consultant Paediatric Anaesthesiologist, Hospital Sultanah Bahiyah, Alor Star
8. Dr Foo Sze Yuen, Consultant Paediatric Anaesthesiologist, Hospital Wanita & Kanak Kanak Likas Sabah
9. Dr Sivaraj Chandran, Consultant Paediatric Anaesthesiologist, Hospital Tengku Ampuan Afzan, Kuantan
10. Dr Phang Ye Yun, Consultant Paediatric Anaesthesiologist, Hospital Tunku Azizah, Kuala Lumpur
11. Dr Faizal Zuhri bin Aziz, Fellow Paediatric Anaesthesia, Hospital Sultanah Aminah, Johor Bahru

Apart from the lectures on updates on various common paediatric anaesthesia topics, we also had a series of case discussions to make the event more interactive such as the approach to "Blue Child", "Bleeding Child", and "Crying Child in the Recovery".

We were also lucky to have Dr Suhaimi Yusuf, Head of Service from KKM Otorhinolaryngology Services of Pahang, who gave an excellent lecture on "Foreign Body in Airway - ENT surgeon point of view and what is expected from anaesthesiologists". He shared many interesting videos on removal of foreign body in airway.

For the live surgery session, participants had an opportunity to have "hands-on" experience dealing with a variety of paediatric cases. We used TIVA technique for all the surgeries. Some of the procedures done included fiberoptic intubation, lumbar epidural, internal jugular central venous cannulation, caudal blocks, ilioinguinal blocks, and penile blocks. On top of that, we also had a skills OT station which had manikins for the participants to practise fiberoptic intubation, intubation via supraglottic airway, and intubation via videolaryngoscopes. We also provided the participants chicken bones for them to practice interosseous cannulation. Live-recording was also used to telecast the procedures to the auditorium for the benefit of others.

In summary, I would conclude that our 14th PAAW 2022 KUANTAN was a successful event. My deepest gratitude to all speakers and my committee members for their tremendous effort and support.

Basic POCUS - The Second Series

by Dr Yeoh Jie Cong and Dr Dr Khairul Idzam Muslim
Hospital Ampang, Selangor, Malaysia

POCUS is an acronym which stands for Point of Care Ultrasound, a term that can be adequately described as a diagnostic or procedural guidance ultrasound that a clinician performs during a patient encounter to help guide the evaluation and management of the patient. Point of Care Ultrasound is complementary to a medical examination performed by primary care physicians in conjunction with a physical examination to investigate unclear findings. It is used to identify either the presence or absence of specific pathological results seen in our patients. It is an increasingly growing field that can be applied in various clinical situations, hence its appeal amongst educators and trainees alike.

In Malaysia, the first Basic held in January 2022 at Hospital Kuala Lumpur with a total of 30 participants. Due to the overwhelming response from this workshop, we decided to have a second POCUS training workshop with more places for registration. This second series POCUS workshop was held in Hospital Ampang by the Hospital Ampang Society of Anaesthesia and Intensive Care (HASAIC) from 25th to 26th April 2022. There were 52 participants from Anaesthesiology and Intensive Care, General Medicine and General Surgery comprising specialists, trainees and medical officers from Government hospitals within Klang Valley, Hospital Muar, Hospital Puncak Alam and Hospital Angkatan Tentera Tuanku Mizan, respectively.

During the course of this workshop, we focused on the three core basic scans in POCUS, namely Cardiac, Lung and POCUS in shock. During registration, the participants were asked about their experience with POCUS application in their daily clinical practice. With this information, we further divided the participants into three main groups based on their experience and familiarity with the usage of clinical ultrasound. The workshop was officiated by Dr Mohd Sany (Head of Department of Anaesthesiology and ICU, Hospital Ampang) and followed by lectures presented by our esteemed speakers - Dr Nadia (Cardiac Ultrasound), Dr Azlina (Lung Ultrasound) and Dr Hidayah (POCUS in Shock).

There were three stations for hands-on sessions; Lung, Cardiac and ICU which were run by two to three facilitators to demonstrate, discuss and supervise the participants as they excitedly learned to scan. The participants were also allowed to sonograph the in-house ICU patients for better clinical integration of POCUS. They were divided into four groups: A, B, C and D. Dr Hidayah and Azlina facilitated groups A and D, Dr Sany and Dr Nadia facilitated group B and Dr Khairul and Dr Yeoh facilitated group C. Dr Melor was stationed in ICU to facilitate all groups.

In the hands-on sessions, we focused on the basic principles of POCUS by teaching the participants to acquire a standard image for interpretation, emphasising the need to correlate ultrasound images with clinical settings, discussing the pitfalls and caveats of POCUS and last but not least, to discuss how POCUS can aid in our daily clinical management. To optimise the experience of the hands-on session, participants from Hospital Ampang were allocated to do their hands-on on the second day of the workshop while the rest continued on the same day itself.

At the end of the workshop, the participants filled up the feedback via Google Forms and an e-certificate was auto-generated and sent to the participants via email. Assessing the feedback form, we found that most of the participants were satisfied with the flow of the workshop. Most had suggested allocating more time for hands-on sessions and having smaller groups. Overall, the Second Series of Basic POCUS workshop was a success with a positive response from the participants. We aim to provide more similar courses in the near future to raise awareness of POCUS usage in our clinical practice.

Help! I am in PAIN!

by Dr Adnesh Kenneth
Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Pain is a dreadful sensation that is at times unavoidable. Imagine waking up from a surgery with an intense feeling of pain after getting a plate of metal drilled into your bone or waking up everyday with that annoying pain over your back from an injury years ago. Either way, both are not pleasant.

In these recent times, the heroes that are responsible for fixing pain are slowly coming into the limelight. What is said to be a niche in the era of medical science and rejuvenative medicine is now gaining popularity. Pain physicians are those who are responsible to bring alleviation to this dreadful sensation, and are now taking it one step further. With the normality of well established landmark techniques and fluoroscopy, ultrasound is now gaining popularity with higher safety profile and marked advantages.

The Pain and Anaesthesia Clinic of Hospital Queen Elizabeth 2, Kota Kinabalu recently ran an Ultrasound Guided Pain Intervention workshop. The aims to

encourage the use of ultrasound in pain intervention and improving the outcome and success rates for ultrasound guided interventions.

This was the first-ever pain workshop in Sabah which was the brainchild of Dr Aldred Soo, Consultant Anaesthesiologist and Pain Specialist of Hospital Queen Elizabeth 2. With over 20 specialists from both private and government centres all over Malaysia, ranging from Interventional Radiologists, Rehabilitative Physicians, Orthopaedic and Spine Surgeons, Pain Specialists and Regional Anaesthetists, this was indeed a good workshop that brought a step forward for the pain management in our country.

Participants had the privilege to listen to esteemed speakers who are actively involved in pain management. The line of guest speakers were Dr Awisul-Islam Ghazali (Consultant Anaesthesiologist and Pain Specialist, Hospital Taiping), Dr Ahmad Afifi Arshad (Head of Department Anaesthesia and Intensive Care, Hospital Sultanah Bahiyah), Dr Rushin Mariadass (Consultant Anaesthesiologist & Pain Specialist, Columbia Asia

Hospital Bukit Rimau) together with our own Dr Aldred Soo. All of them are trained anaesthesiologists and pain specialists doing great work across the country.

The speakers most notably stressed on how ultrasound has improved their practice. Lectures given included focus ultrasound techniques on cervical region, thoracic region, pelvic region and joints of the body. Besides that, the formulation of injectate and choosing the correct injectate for each location too was shared. Most recent evidence-based information was introduced with latest recommendations on the correct choice of block which was also discussed with the panelists.

The full day course also included a hands-on session of 'knobology' where training was given to identity structures of interest using ultrasound with live models. All four panelists facilitated the multiple ultrasound stations that included cervical & neck, thorax & shoulder, pelvic & hip and joints of the body. Each participant had the opportunity to run down each model using the ultrasound to gain the experience of ultrasound identification of the structures.

With a full day itinerary, although what seemed to be a power packed workshop, all of the participants left with more knowledge and more confidence in using ultrasound in pain interventions. The hope remains that this will not be a one-off experience but there will be more of such workshops in days to come!

Nutrition: When Ignorance is NOT Bliss, it Starves!

by Dr Kang Ker Cheah, Dr Shareen Syed Maule, Dr Zehan Sofia Hilmi and
Dr Wan Nur Athirah Wan Azli
Hospital Sungai Buloh, Selangor, Malaysia

Food. The basic need for any living organism to survive. Food, the source of which our body derives its nutrients from. When we think of food, we think of delicious delicacies our palate has experienced or has yet to experience. But, what about our critically ill patients? Especially the ones who are intubated and ventilated in our ICU? This is when their need for nutrients becomes a matter of survival and beyond palatable delicacies. Physicians and their healthcare team have long been the advocate for their patients. Or are they? When our patients are battling for their lives in our ICU, one can easily forget about the importance of "filling one's tummy". The ignorance, surrounding the importance of preventing iatrogenic starvation leading to further lean body mass loss and nitrogen deficit, stems from a team's microscopic lens focusing on only what is visible for immediate correction, such as a low blood pressure from sepsis, reduced urine output from a deranged renal profile etc. The intention for nutrition awareness week in our ICU is in no way intended to divert one's attention from addressing acute issues and underlying problems that caused it. But rather, to highlight attention to the equal importance of adequate nutrition provision to critically ill patients in our ICU.

Nutritional therapy is an essential part of the care for critically ill patients. Integrating nutritional sciences into clinical practice is fundamental to improve patient care and prognosis. With this in mind, the Intensive Care Unit of Hospital Sungai Buloh, decided to organise a 'Nutritional Awareness Week' which was held from 23rd to 29th May 2022. Our very first, after a long hiatus from the COVID pandemic. Surely it won't be our last! Doctors, nurses and our ICU dietician participated in this event.

Our main objective was to increase awareness of the importance of nutrition in our ICU. Secondary objectives were to introduce a revised enteral feeding protocol for ICU patients and to encourage compliance to protocol with the aim of ensuring adequate nutrition provision to our ICU patients.

Engaging activities were held throughout the week where we received participation from doctors, nurses and dieticians. Activities consist of a nutritional webinar session, online quiz, lucky draw and enteral feeding protocol audits with ICU wings compliance assessed and rewarded.

We started the week with a webinar where our Intensivists, Dr Kang and Dr Ashraf, along with our in-house ICU dietician, Puan Huda, discussed the importance of nutrition. The new ICU feeding protocol was introduced, feeding methods, enteral feeding formula options were amongst many other things that were discussed in terms of nutritional aspects of care for our patients.

Our team also worked on a new attractive nutritional board consisting of the revised protocol, and other nutritional fun facts that were displayed in both of our ICU. To make things more attractive and interesting in this new age of social media, we even had social media selfie frames which turned out to be great photo props, creating photo memories of the week.

An online nutrition quiz was conducted with 20 questions to test on how much we have learnt throughout the week. Top scorers qualified for a lucky draw where they were rewarded and encouraged with cash prizes (Grab vouchers!). On top of that, we even had a friendly competition between both our ICU wings to ensure compliance with the new protocol that was introduced earlier in the week. An ongoing nutrition audit is being conducted by the ICU nutrition committee, to assess compliance to protocol. The ICU nutrition committee, made up of consultants, specialists, medical officers, nurses and dietitians have pledged to continue the effort to strive for best ICU nutrition for our patients. This, we believe, holds importance for lesser morbidity and better functional outcomes for our patients. Thus, a sustained effort through more awareness activities throughout the year is to be expected from us!

2nd Regional Anaesthesia Workshop - Central Zone, Selangor

by Dr Yoshitaa Jayabalan and Dr Khor Xe-Haw
Hospital Tengku Ampuan Rahimah, Klang, Selangor, Malaysia

From pandemic, COVID-19 infection is slowly changing to endemic. Like the light shining at the end of the tunnel, life has gradually returned to a semblance of normalcy. With that, the Department of Anaesthesiology, Hospital Tengku Ampuan Rahimah, Klang organised the 2nd Regional Anaesthesia Workshop (Central Zone, Selangor) on the 27th - 28th May 2022. It was the first face-to-face workshop organised since the COVID-19 pandemic in 2019. The workshop was chaired by Dr Norsila Abd Razak (Consultant Anaesthetist) and the speakers for the workshop includes, Dr Siew Gee Ho, Dr Wilson Hau Wuei Yeow, Dr Deepa Lakshmi A/P Dorai Rajoo and Dr T Kumaravadivel Dharmalingam.

Regional anaesthesia is defined as a temporary elimination of nerve conduction and pain senses in particular regions of the body with local anaesthetics without loss of consciousness. The history of local and regional anaesthesia began with the discovery of the local anaesthetic properties of cocaine in 1884. Shortly afterwards, nerve blocks were being attempted for surgical anaesthesia but in the early years, these blocks were performed by surgeons. As the specialty of anaesthesia evolved, we gradually took over this role of providing surgical anaesthesia or analgesia via nerve blocks. The initial loss of popularity seemed to relate to vast improvements in general anaesthesia. However, over time, increasing concern about postoperative analgesia in the 1970 to 1980s eventually contributed to developments and increased practice of regional anaesthesia.

The recent COVID-19 pandemic has resulted in regional anaesthesia being the primary choice of surgical anaesthesia amongst many anaesthetists as it allows for a reduction in airway manipulation. Besides that, recent studies have shown that regional anaesthesia promotes early mobilisation, high analgesia level, shortened hospital stay, and lower postoperative nausea and vomiting. With all the said benefits, the regional anaesthesia workshop emphasised on the literature behind upper limb, lower limb and truncal blocks as well as the art and safety of performing a block with hands-on teaching sessions. A total of 24 medical officers from Hospital Tengku Ampuan Rahimah, Hospital Banting and Hospital Shah Alam participated in the two-day event held at HTAR itself. The goal of the workshop was to familiarise medical officers to practise regional blocks for primary surgical anaesthesia and for acute pain. We aimed for medical officers to be confident to carry out blocks either assisted or unassisted at their respective centres at the end of the two-day course.

Day one of the workshop held in Auditorium Permata HTAR kicked off with a welcome speech from Head of Department & Consultant Anaesthetist HTAR, Dr Haji Mohd Rohisham Zainal Abidin. This was then followed by lectures from our in-house anaesthetists and pain trainees. Dr Deepa presented the first lecture for the workshop on upper limb blocks and participants were educated on the sonoanatomy of nerve bundles pertaining to the type of block, its coverage level, patient positioning, scanning technique, block conduct, goals

and potential complications. This was followed by lectures on lower limb and truncal blocks presented by Dr Wilson and Dr Siew respectively, covering similar subtopics. The final lecture session on the morning of Day 1 was on monitoring and safety in regional anaesthesia presented by Dr Kumar. The practice of regional anaesthesia has traditionally suffered from a lack of patient monitoring; rather more focus is placed on needle-nerve relationship and preventing neurologic injury. Medical officers were made aware of the recent advances and importance in patient monitoring to reduce the three most feared complications of peripheral nerve block namely, local anaesthesia toxicity, inadvertent damage to adjacent structures and nerve injury. At the end of the lectures, medical officers were given a short quiz to assess their grasp on the literature of blocks.

The second half of Day 1 scheduled a hands-on practical session on sonoanatomy of nerve blocks, ultrasound probe and needle technique. The session was organised in the operation theatre with four stations; three of which with real-life models for nerve identification on ultrasonography. These three stations were divided for upper limb, lower limb and truncal blocks. The final station aimed at simulation-based training for ultrasound position and needle orientation. Each participant was given the opportunity to practise on probe manoeuvres to improve needle and target visualisation. The two-hour afternoon practical session was a wrap-up on Day 1 of the Regional Anaesthesia Workshop.

Day 2 of the workshop was a half-day session held in the Orthopaedics operation theatre of HTAR. The agenda on Day 2 was a real-life regional block session performed on agreeing patients undergoing elective and emergency orthopaedic surgery. Participants were given the opportunity to perform blocks under the guidance and supervision of the organising committee. Various blocks were successfully performed by participants, some of them never performed regional blocks before. Regional blocks performed on Day 2 included supraclavicular, fascia iliaca, femoral, popliteal and sciatic nerve blocks.

Throughout the workshop, literature and practical sessions were integrated to bring about the best form of education. This was proven on Day 2 of the course when many successful blocks were performed and participants were keen to perform more. After two years of a complete shutdown in hands-on education, this workshop was a success in delivering education and promoting growth and excellence amongst medical officers in Anaesthesia.

We would like to thank our participants for making this workshop an interactive and successful one.

Mirth And Mayhem Working Overseas

by Dr Keen Hoe Cheah
Calvary Public Hospital, Australia

In September 2021, I was asked by Dr Shahridan Mohd Fathil to write about my working experience in Singapore and Australia. Out of "deference is no substitute for obedience" principle, I accepted the task given by this respectful and sincere ex-mentor of mine. It took me a while to get things organised.

I still remember vividly back in 2007, just like any other anaesthetic trainees, I was in the middle of a brain-fog navigating through the Master Anaesthesiology programme in UMMC and ANZCA part 1 exam I managed to get through the challenge because I had an impeccable study group which consisted of five members. Credit must be given to Dr Tey WanYee, Dr Loo Suyin, Dr Ng LipYang and Dr Hui MunTsong. Without their support it was almost impossible for me to complete both programmes. I am glad that over the years, our friendship has grown and I want to take this opportunity to thank them. I truly appreciate the camaraderie we have formed all these years.

Right after completing my neuroanaesthesia fellowship in the Royal Melbourne Hospital, I took up a consultant position in the Royal Darwin Hospital in 2013. As an introduction, the Royal Darwin Hospital (RDH) is a 345-bed teaching hospital located at the northern suburb district of Tiwi, Darwin, Northern Territory. It is also a home of the National Critical Care and Trauma Response Centre funded by the Australian Government after the hospital's efforts associated with the 2002 Bali bombings. Due to the geographical factor of Darwin, about 20% of the population is made up of Aboriginal and/or Torres Strait Islander people. Due to the lower education and income levels, these groups make up the majority of admissions to the hospital. Necrotising fasciitis, critical airway obstruction from oral or neck abscess, diabetic foot with multiple comorbidities and severe peripheral vascular disease are just some of the complicated cases. I managed to polish up my awake fibreoptic intubation and regional anaesthetic skills tremendously thanks to all these complicated patients.

Perisher Ski Resort, ACT

In 2014, I wondered if I should get out of my comfort zone and explore the "anaesthetic world" further. I started applying jobs in Hong Kong, Singapore and Shanghai and eventually I chose the Alexandra Hospital, Singapore as my next stop. This is the place where I met Dr Shahridan and a team of highly efficient and knowledgeable anaesthetists. Alexandra Hospital is a hospital in Queenstown, Singapore. The hospital's colonial style building was constructed in the late 1930s. It was known as British Military Hospital before and was the site of massacre during the World War II during the Japanese occupation. It is also well known for its spooky stories. At that time Alexandra Hospital was under the management of Jurong Health and the plan was to move to the brand-new Ng Teng Fong General Hospital (NTFGH) once it was ready.

Named after Singaporean entrepreneur, the late Mr Ng Teng Fong, the hospital was finally ready in June 2015 and Jurong Health moved from Alexandra Hospital to NTFGH. NTFGH was officially opened on 10th October that year. It was part of an integrated development together with adjoining Jurong Community Hospital and it offered 700 beds to the community of Jurong East, Singapore.

I have learnt so much during my stay in Singapore, not only in the clinical part of anaesthetic practice but how to run a clean, efficient and safe anaesthetic department. What impressed most is NTFGH offered a "4-less" environment for the patients - Chartless, Scriptless, Filmless and Paperless. This modern, state-of-art hospital is equipped with top notch facilities and equipment. Needless to say, the excellent international anaesthetic team which came from different races and cultural backgrounds has make NTFGH as an ideal place for practice. As a tertiary centre, it offered a wide range of anaesthetic services except O&G, Paediatric and Cardiac Anaesthesia.

I was complacent to be a senior consultant in Singapore until COVID-19 hit hard in 2021 that I decided to move back to Australia. Currently I am a 0.75 full-time-employed staff specialist in Calvary Public Bruce Hospital in Canberra. The flexibility of working environment in Australia is the biggest advantage in their health system I would say. You can not only choose the number of working hours per week as you wish, but also either working in private, public or both. Some of my colleagues even work in 2 or 3 different hospitals. Calvary Public Hospital Bruce is a public hospital located in Bruce,

Australian Capital Territory serving the northern suburbs of Canberra. In the 2019-2020 financial year, Calvary Hospital conducted about 5000 elective surgeries and handled 63,650 Emergency Department presentations. I find the most challenging part in anaesthesia practice in Canberra are frequent encounters with patients of high BMI (above 35) and chronic pain patients with multiple social-behavioural issues. Drugs such as methadone and buprenorphine patch have become the routine "staple" for patients here. As a result of better healthcare system, the average lifespan of people become longer too, hence a lot of elderly patients (mostly above 85 years old) with multiple medical diseases come in for all sort of surgeries.

Apart from patient demography difference in all countries, let's dive in further into the training programme. After working in three different countries for the last 25 years, I am proud that I was trained in Malaysia because (to be honest) our training programme is not inferior compared to other two countries. The foundation training years from Malaysia had made me feel confident and competent when I continued my training in Australia. Although the working hours in Malaysia are long (probably 60 hours per week compared to strictly 40 hours in Australia and 50 hours in Singapore) but the caseloads and experience I gained are abundant. Having said that, the training programme in Singapore and Australia are more structured and well organised in terms of teaching and supervision. There are guidelines and references from the College website for exam candidates as well as the logbook system which is well established in both countries. We only have one set of exam questions for the whole Australia or Singapore, unlike Malaysia (during my time) there are different sets of exam questions for each University. I found this not only unfair to candidate, but also affect the standard of the exam generally.

Cradle Mountain, Tasmania

There are pros and cons regarding the flexibility working culture in Australia. The anaesthetist here tends to choose certain lists or surgeons to work with. This had led to the lost of some of their anaesthetic skills. Staff shortage has always been an issue in Australia especially in remote areas. However, I enjoy working here because it gives me the opportunity to meet people from all over the world, eg; South African, Europe, Asia and South or North America. The existence of a variety of culture groups within the hospital has taught me how to breakdown stereotypes, intolerance and bullying within one's institute.

When it comes to administration and management aspect, I find that Singapore is the best in terms of planning their elective lists. All the patients will be seen in anaesthetic clinic without miss and will be sorted out and finalised within 48 hours. In Australia, as a consultant, we are given 25% of our clinical time for non-clinical work. You can use the hours to gain your CPD points, prepare teaching materials or do research and audits. I do not see this happen in Malaysia and Singapore. In my opinion this is imperative to ensure the non-clinical aspects are well taken care of.

In terms of resources support, Singapore has the best. This comes in no surprise as Malaysia is still under the category of developing country compared to the other two countries. Expensive drug like sugammadex and sophisticated equipment are easily available in Singapore and Australia. During the pandemic, I had access to the best respirator in Singapore while other countries were just using the basic N95 mask, etc. Apart from that, I did not see a major difference in anaesthetic practice except the anaesthetist in Australia tends to run TIVA as his default technique.

Working experience aside, Canberra where I am staying now is the capital city of Australia. Winter in Canberra is cold with average temperatures between 1 - 12°C, dropping below 0°C at night. Snow falls in the nearby Australian Alps, making Canberra a great stopover on your journey to the slopes. It is also just less than 3 hours' drive to Sydney, making it a great city to stay if you want a balance between rural and urban.

Floriade Tulip Festival, Canberra

Having said all this, the occasional emotional distress of feeling homesick is inevitable. As you grow older, you will discover that you have two hands - one for helping yourself, the other for helping others. Back in my mind, the idea of contributing and giving back to "tanahair-ku" is still flaming. I am unsure how long I will stay in Australia; probably till I finish exploring New Zealand and the adjacent countries before I decide my next stop. I do urge the budding young anaesthetists to expand their horizon and widen their working and living experiences before it gets too late. Until then, hope you enjoy reading my humble experience and please don't hesitate to contact me should you have any questions. My email address is keenhoecheah@gmail.com. All the best!

9th Ultrasound Regional Anaesthesia Workshop – USGRA (Central Zone) 2022

by Dr Sri Rahayu Mohamed Lokman
Hospital Ampang, Selangor, Malaysia

After two years of life without physical attendance at courses due to COVID-19, we are thankful to this game-changing year for all. It is great to be back to our normal routine. For that matter, we have finally organised our yearly course on 15th & 16th March 2022, more than a month before we hit the endemic era.

We have called upon anaesthetic medical officers from the Klang Valley hospital to join us. The participants were limited to 25. The usual numbers were previously around 30 to 35 participants. Among all the participants, five of them were specialists from Hospital Kuala Lumpur, Hospital Serdang and Hospital Kajang. The others were medical officers.

Day 1 opening speech by our HOD Dr Mohd Sany bin Shoib

As a precaution, all of them were strongly suggested to do saliva test, must have completed booster dose of COVID-19 vaccines and not having any COVID-19 symptoms. For these two-day course, all participants and committee were repeatedly reminded to follow strict SOP to prevent the spread of COVID-19 among them.

Day 1 practical session by our facilitator Dr Khairul Idzham

The first day of the course was aimed to get the theory and practical points of view in USGRA. There were four lectures in the morning, covering Upper Limb Blocks, Lower Limbs Blocks, Central Neuraxial and Trunks Blocks and finally Safety in Regional Anaesthesia. In the afternoon, it was a practical session with four stations, Upper Limb, Lower Limb 1, Lower Limb 2 and Trunks. The participants were able see the anatomical view of the models using ultrasound, as well as getting use to the handling of ultrasound machines.

The second day was the hands-on session in operating theatre. It involved 10 patients from orthopaedic, gynaecology and surgical departments. All patients have been prepared pre-operatively to become the subjects in this course. Informed consent was taken. Temporary privileging for all the participants was taken before any member procedure was done on the patients.

Day 2 hands-on session in OT by our facilitator Dr Wan Nabilah. Using big screen to allow social distancing among participants.

We were glad to say that this time, more variety of blocks could be performed. While it gave more fruitful hands-on session where the participants had more opportunity to learn, we were able to provide opioid-sparing analgesia to the majority of the patients.

There was a total of 15 procedures, whereby two were continued as an infusion (catheter inserted).

1) Lower limb - Adductor canal block, 2 Femoral block, 3 Popliteal block
2) Upper limb - Supraclavicular block
3) Trunk - Paravertebral block T3
4) Trunk - Bilateral Quadratus Lumborum block (catheter)
5) Trunk - 3 classic and 2 subcostal Transversus Abdominis Plane block
6) Trunk - Erector Spinae Plane block (catheter)

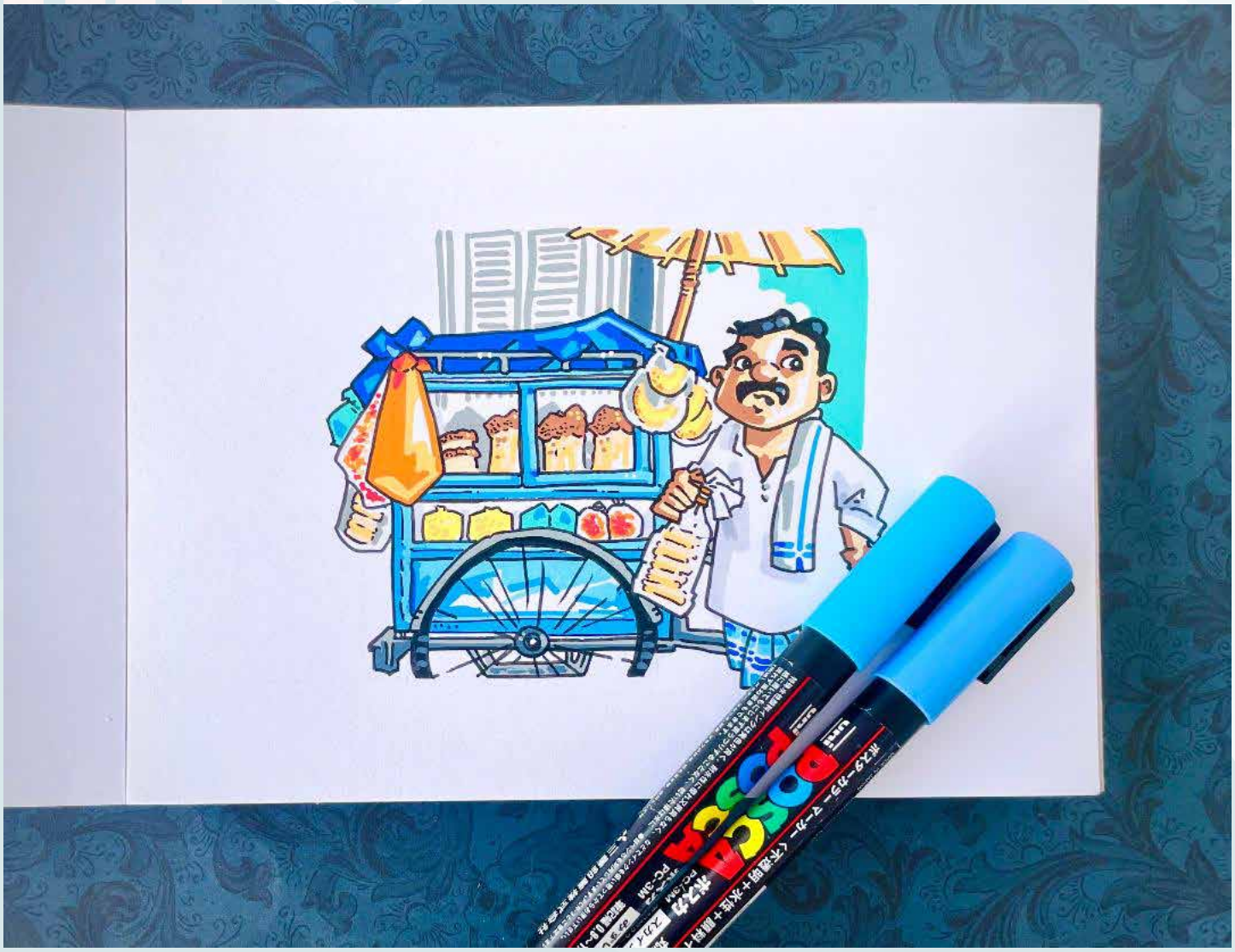
At the end of the session, there was a closing ceremony where tokens of appreciation were give to participants, company representatives as well as the facilitators. The feedback from the participants was gathered to improve our future courses. We hope to have this as a yearly programme again. Fingers-crossed no other pandemic revisits!

Day 2 hands-on session in OT

Closing ceremony by our chairman Dr Raziman

ANAESTHESIOLOGISTS *Creates*

by Dr Paul Ooi
Columbia Asia Hospital, Miri, Sarawak, Malaysia



Working in East Malaysia has its share of challenges, one of which is the lack of certain necessities during tea time that seem almost commonplace to most of us back in West Malaysia. And yes, not only the lovely uncle selling vadai and the like, but also the friendly roti man. You'll never know what you're missing till the clock ticks slowly on the operating theatre wall - and you don't even have the trusty roti man outside with his bread and snacks so readily available!'

Nature Photography

by Dr Mahmud Zuhdi Abdullah
Kuantan Medical Centre, Pahang, Malaysia

Anesthesia - Discovery, Progress, Breakthroughs by Professor Werner Hugin

by Dato' Dr Mohamed Hassan Haji Mohamed Ariff

A case of very severe respiratory obstruction prompted Dr Harold Griffith, a Canadian anaesthesiologist, to investigate a new technique of general anaesthesia, dubbed 'endotracheal". After induction of anaesthesia, a thin rubber tube was passed into the vocal cords and an anaesthetic mixture pumped directly into the lower respiratory tract. This technique solved a number of problems, and from then on Griffith never gave an anaesthetic without that rubber tube beside him.

He found that urological catheters, which were easy to obtain, served the purpose well. As he gained experience, he found that he could perform the procedure without danger to the larynx or the tracheal mucosa. He soon realized that the larger the catheter, the easier it was to pass into the trachea. He thus wrote to the manufacturer in France and asked for even larger catheters; these were promptly delivered and proved ideal for the purpose.

One day, Griffith received a letter from the manufacturer, who said that the ladies he employed in the factory were very eager to know what race of supermen was living in Canada.

ANAESTHESIOLOGISTS CREATES

TRIFLE

by The Chef In Black

INGREDIENTS

1. ***Swiss Roll cake (preferably strawberry)***
2. ***Fruit cocktail (1 can)***
3. ***Crystal jelly NONA strawberry flavour (1 box 400 ml)***
4. ***Custard powder (3 Tbs)***
5. ***Sugar (5 Tbs) more if you want it sweeter***
6. ***Milk (1L)***
7. ***Berries, Kiwi, Grapes (garnishing)***

Garnish
Custard
Crystal Jelly / Fruit Cocktail
Swill Roll

METHOD

Cut the Swiss rolls into thick slices and layer them at the base of the casserole dish. Arrange so that there are no gaps in between. Then pour a little syrup from the fruit cocktail can onto the cake layer. Then spread the fruits from the can evenly on the cake layer. Mix the crystal jelly in 400 ml of hot water and stir until it thickens; then pour the jelly gently onto the cake and fruit layer until it fully covers the whole area. Leave it to cool down and set. Boil milk and add sugar. While stirring, add the custard powder till thickened. Gently spread the custard on the crystal jelly layer and let it cool and set. Garnish with the berries, grapes and kiwis...voila. Enjoy.

Precedex®
(dexmedetomidine HCl Injection)

The flexibility to fine tune sedation with Precedex®

- Analgesic-sparing effect[1-2]
- Promotes patient arousability[2-4]
- Minimal respiratory depression[1-4]

Abbreviated prescribing information for Hospira™ Precedex® (dexmedetomidine hydrochloride)[5]
Indication & Dosage: 1) Sedation of initially intubated and mechanically ventilated patients in the ICU not exceeding 24 hours. Initiation of Intensive Care Unit (ICU) Sedation: loading infusion of 1 mcg/kg over 10 minutes for adults; Maintenance of ICU Sedation: infusion of 0.2 to 0.7 mcg/kg/hr is recommended for adult patients. 2) Sedation of non-intubated patients prior to and/or during surgical and other procedures. Initiation of Procedural Sedation: loading infusion of 1 mcg/kg over 10 minutes is recommended for adults and awake fiberoptic intubation (AFI) patients. 0.5 mcg/kg for less invasive procedures; Maintenance of Procedural Sedation: infusion of 0.6 mcg/kg/hr then titrated to desired clinical effect with doses ranging from 0.2 to 1 mcg/kg/hr recommended for adult patients. Fixed maintenance infusion of 0.7 mcg/kg/hr for AFI patients. Due to possible pharmacodynamic interactions, a reduction in dosage of Precedex or other concomitant anesthetics, sedatives, hypnotics or opioids may be required when co-administered. Dosage reductions may need to be considered for patients with renal or hepatic impairment, and geriatric patients. **Contraindication:** Patients who are hypersensitive to this drug or to any ingredient in the formulation or component of the container. **Adverse reaction:** nausea, dry mouth, vomiting, bradycardia, atrial fibrillation, tachycardia, sinus tachycardia, ventricular tachycardia, pyrexia, hyperthermia, chills, edema peripheral, hypovolemia, hyperglycemia, hypocalcemia, acidosis, atelectasis, pleural effusion, hypoxia, pulmonary edema, wheezing, agitation, anemia, post-procedural hemorrhage, urine output decreased, hypotension, hypertension, respiratory depression, bradypnea. **Precaution**: Due to the known pharmacological effects of Precedex®, patients should be continuously monitored and administered by persons skilled in ICU or operating room setting. Clinically significant episodes of hypotension, bradycardia and sinus arrest have been associated with Precedex®, thus caution should be exercised in patients with advanced heart block and/or severe ventricular dysfunction or when vasodilators/negative chronotropic agents are co-administered. Transient hypertension has been observed primarily during the loading dose of Precedex®. Some patients receiving Precedex® have been observed to be arousable and alert when stimulated. Withdrawal symptoms has been seen in adults with administration up to 7 days. Use of Precedex® beyond 24 hours has been associated with tolerance and tachyphylaxis and a dose-related increase in adverse reactions. Dose reduction should be considered in patients with impaired hepatic function. Should not be co-administered through the same intravenous catheter with blood, serum or plasma. Amphotericin B, diazepam is incompatible when administered with Precedex. **Presentation:** Precedex® (dexmedetomidine hydrochloride) injection, 200mcg/2mL (100 mcg/mL) available in 5 x 2mL clear glass vial.

API-PRECEDEX-1018

FULL PRESCRIBING INFORMATION IS AVAILABLE UPON REQUEST.

References: 1. Landoni et al: Dexmedetomidine reduces the risk of delirium, agitation and confusion in critically ill patients: a meta-analysis of randomized controlled trials. *J Cardiothorac Vasc Anesth 2014, 28:1459-1466*. **2.** Szumita PM, Baroletti SA, Anger KE, Wechsler ME: Sedation and analgesia in the intensive care unit: evaluating the role of dexmedetomidine. *Am J Health-Syst Pharm 2007, 64:37-44*. **3.** Torbic H, Papadopoulos S, Manjourides J, Devlin JW: Impact of a protocol advocating Dexmedetomidine over propofol sedation after robotic-assisted direct coronary artery bypass surgery on duration of mechanical ventilation and patient safety. *Ann Pharmacother 2013, 47:441-446*. **4.** Carollo DS, Nossaman BD, Ramadhyani U: Dexmedetomidine: a review of clinical applications. *Curr Opin Anaesthesiol 2008, 21:457-461*. **5.** Precedex Hospira Malaysia PI, October 2018

For Healthcare Professionals use only.

Pfizer

Pfizer Malaysia Sdn. Bhd. Registration No: 197801003134 (40131-T)
Level 10 & 11, Wisma Averis, Tower 2, Avenue 5, Bangsar South, No. 8, Jalan Kerinchi, 59200 Kuala Lumpur.
Tel: 603-2281 6000 Fax: 603-2281 6388
www.pfizer.com.my

PP-PDX-MYS-0156-12JAN2022

Welcoming the Anaesthesiologists - May 2022

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Durgalakshmi Naidu Ragupathy Naidu
Najibah Syakirah binti Ab Rahman
Nor Azura binti Said @ Ahmad
Nurfatihah Alias
Saw Yee Horng
Tan Choon Huat

UNIVERSITI KEBANGSAAN MALAYSIA

Adania binti Abu
Akita Yvonne Koh
Azrul Razak bin Abdul Aziz
Chin Jian Wei
Farah Hanim binti Abdullah
Goh Kay Mint
Haridass A/L Gunasegaran
Jimmy Tan Jia Heau
Kan Wye Hon
Kauthar binti Md Rashid
Kevin Tan Teck Meng
Muhammad Naufal bin Mohamed Noor
Nurzohara Aisha Noorazyze binti Rahmat Ameen Noorazyze
Shuhaida binti Che Shaffi
Syafawati binti Samsudin
Tan Eng Thye
Usha Rani A/P Ramasami
Wong Theng Koe
Yong Joon Thiam

UNIVERSITI MALAYA

Ahmad Faris bin Ngimron
Alvin Foo Jee Hon
Cheow Jaan Perng
Harishini A/P Jagatheesen
Janice Goh Tze Mei
Kogilavaani A/P Sathiam
Lee Chik Sheng
Lee Kah Wei
Mayura Hanis binti Ahmad Damanhuri
Norashekeen binti Abdul Razak
Ong Lip Kent
Ong Soon Yiu
Prahbodhamuralhi Selvanathan
Sarah Mong Xiao Yi
Tan Boey Warn
Tan Chen Long
Tan Pek Jin
Teoh Tsyr Xiang
Wong Wai Kit
Wong Yu Xiang
Zakaria bin Abdul Razak

UNIVERSITI PUTRA MALAYSIA

Ahmad Thariq bin Kharuddin
Chea Su Gaik
Guok Eng Ching
Hamsathvani Chandrakanthan
Mohd Khairul Fadzly bin Ahmad
Thanesh Kumar A/L Muthusamy

UNIVERSITI SAINS MALAYSIA

Afham Naqiuddin bin Osman
Ahmad Firdaus bin Yaakop
Ainaa binti Ismail
Amar Ghassani bin Ghazali
Baiduree binti Borhan
Chia Lip Han
Chiong Woei Zhong
Christy Anne Lee Chang Hui
Dayang Shariza binti Abang Abdillah
Kang Wei Pin
Mohamad Azlan bin Awang
Mohd Firdaus bin Mohd Yusof
Mohd Hafiz bin Abd Razak @ Abd Ghazab
Mohd Rushdan Bin Halim
Muhammad Iqbal bin A Ghani
Ng Sook Hoon
Noor Rusdina binti Mohd Noor
Tan Huey Jiun
Thang Pooi Yee
Wong Pit Cui
Zuriah Salmi binti Zabri

Baxter
Anesthesia

ANESTHESIA IN OBESE SURGICAL PATIENTS: AN UPDATE ON THE ROLE OF DESFLURANE

A DISCUSSION SUMMARY

featuring:

SPEAKER:
Ashish Shah, MD
Professor & Director of Research, Anesthesiology, Loma Linda University, California, USA

MODERATOR:
Marzida Mansor, MD
Professor, University of Malaya, President of College of Anaesthesiologists, Academy of Medicine of Malaysia

Obesity is considered a modern epidemic and often presents challenges to anesthesia practice, from starting an IV line, intubation and ventilation to pain control and extubation.[1]

An ideal inhalational agent requires a profile with rapid induction and emergence, facilitates quick variations in the depth of anesthesia, provides additional muscle relaxation, non-irritating, inexpensive, with low toxicity and a good safety profile among others.[2]

In a meta-analysis of RCTs involving patients undergoing ariatric surgery, desflurane, compared to sevoflurane, showed an improved recovery profile with reductions in time to eye opening and tracheal extubation by 37% and 34% respectively and a higher Aldrete score suggesting a more rapid return of airway reflexes upon admission to the PACU.[3]

Various trials have likewise demonstrated faster and better recovery of muscle strength and lower hemodynamic variations among obese patients with the use of desflurane.[4-5]

Increased postoperative mobility with less sedation and hypoxemia and with significantly better early and immediate recovery compared to isoflurane and propofol were similarly observed.[9-10]

These observations coupled with reduced length of stay in recovery rooms[6] that could add a positive economic impact to desflurane's known clinical benefits, suggests a good value that offsets the direct cost.

Mitigation of the environmental impact of healthcare products and services can be achieved through improvement not just in the OR domain (e.g. energy-efficient OR HVAC* practices and lighting) but also in the supply chain (e.g. localization of OR supply chain inputs), waste (e.g. increased use of reusable medical supplies and devices), and the continuum of care (e.g. integration of telemedicine into preoperative and postoperative care).[7]

Newer technology for example has made it possible to capture 99% of exhaled desflurane in the operating room for recycling and future reuse,[8] which has the potential to eliminate the very minimal yet identified concern of the greenhouse effect of modern inhalational gases, making it more favorable for clinicians to select the most appropriate therapy option depending on their patients' clinical needs.

*Heating Ventilation Air-Conditioning

REFERENCES
1. *J Anesth* 26, 758–765 (2012). **2.** *Inhalational anaesthesia, Anaesthesia & Intensive Care Medicine,* Volume 23, Issue 1, 2022, Pages 60-68. **3.** *Obes Surg.* 2017 Nov;27(11):3031-3039. **4.** *British Journal of Anaesthesia,* Volume 91, Issue 5, 2003, Pages 638-650. **5.** *J. Clin. Med.* 2022, 11(1), 162. **6.** *British Journal of Anaesthesia* 99 (3): 353–8 (2007). **7.** *Anesth Analg.* 2021 May 1;132(5):1489-1493. **8.** Data on file. **9.** *Anesth Analg.* 2000 Sep;91(3):714-9. **10.** *J Anaesthesiol Clin Pharmacol.* 2013 Jan; 29(1):36-40.

Key message from **Prof. Dr. Marzida Mansor**:

Anesthetizing obese patients is challenging as they have a higher incidence of comorbidities and altered physiology. Obese patients are prone to pulmonary complications and acute upper airway obstruction and aspiration following tracheal extubation at the end of surgery[1]. They also have a higher incidence of sleep apnea and developing hypoxia during the early postoperative period[2]. A faster recovery from anesthesia may decrease these risks by reducing the time patients require to resume control of their spontaneous breathing, restore airway protective reflexes, and regain efficient coughing.

Desflurane has a low fat-blood solubility coefficient and may be better suited in this population to achieve a rapid emergence. Some studies have shown that desflurane is associated with faster emergence and recovery in morbidly obese patients compared to other inhalational anaesthetics[3].

REFERENCES:
1. Murphy C, Wong DT. Airway management and oxygenation in obese patients. *Can J Anesth* 2013; 60: 929-45. **2.** Ahmad S, Nagle A, McCarthy RJ, Fitzgerald PC, Sullivan JT, Prystowsky J. Postoperative hypoxemia in morbidly obese patients with and without obstructive sleep apnea undergoing laparoscopic bariatric surgery. *Anesth Analg* 2008; 107: 138-43. **3.** Liu FL, Cherng YG, Chen SY, et al. Postoperative recovery after anesthesia in morbidly obese patients: a systematic review and meta-analysis of randomized controlled trials. *Can J Anesth* 2015.

For Healthcare Professionals Only.
For full prescribing information, please contact:

Baxter Healthcare (Malaysia) Sdn Bhd (159204-W)
B-21-3A, Level 21, The Ascent, Paradigm, No. 1, Jalan SS 7/26A, Kelana Jaya, 47301 Petaling Jaya, Selangor Darul Ehsan.
Tel:+603 7611 6899 Fax: +603 7611 6800

MY-PH49-220009(v1.0) 06/22

Suprane
(DESFLURANE, USP)

continued from back page

the quality and safety of vascular access procedures. It is concise, evidence-based and include guidance on training and competency.

The CoA and the MSA have also updated the guidelines on "Patient Safety and Minimal Standards of Monitoring during Anaesthesia and Recovery". This will be the 5th edition; the 4th edition was published in 2013. We hope to launch both the guidelines at the MSA/CoA ASC in August this year.

CME Activities

1. A webinar on Difficult Conversations: Open Disclosure following Adverse Events" was conducted on 21st May 2022. This webinar was organised by the MSA and the CoA in collaboration with the medical humanities and ethics unit, Universiti Malaya. The webinar featured scenarios on open disclosure when the care is reasonable and when the care is not reasonable.

2. Perak Obstetric Anaesthesia Symposium 2022 was held at the Hospital Raja Permaisuri Bainun, Ipoh. This symposium was organised by Hospital Ipoh in collaboration with the Obstetric SIG, CoA.

3. An Introduction to Evidence-Based Medicine on-line workshop was conducted on the 1st June 2022. This was the first of such workshops and we are planning to make this as a regular feature in our CME programme.

4. On 3rd July 2022, the Wellbeing SIG organised a face-to-face seminar on wellbeing and the theme of the seminar was "Joy at work". The COVID-19 pandemic has thought the Anaesthesiology fraternity to recognise the importance of mental well-being. In fact, the sustainability of healthcare practice as a whole will depend on the strength of each individual provider, and the role of support as a team

   The objective of the seminar was to promote a healthier lifestyle in building our well-being to enhance better patient care. It was held at the RUMA Hotel and Residences, Kuala Lumpur and attended by 35 participants. The SIG also took this opportunity to launch "The Joy at Work Campaign" and to create awareness about the existence of the Wellbeing SIG for the country.

   Participants consist of wellbeing enthusiasts from hospitals around Klang Valley and Sarawak. The participants had a yoga session followed by three lectures on how to lead a well-balanced lifestyle and tips on how to get started with a wellbeing project in their own hospitals. Please look out for more announcement on how to participate in the "Joy at Work Campaign" on the CoA website.

Participation in International Conferences

1. The CoA has participated in the ASEAN Congress that was held in Hanoi, Vietnam on 18th to 19th March 2022. Six Malaysian speakers were invited to deliver lectures for the plenary and symposia at the congress.

2. On 28th April 2022, I was invited as a panelist at the ANZCA Emerging Leaders Conference that was held virtually. The panel discussion was titled "Beyond 2022: Future Leaders of Anaesthesia and Pain Medicine Colleges".

Upcoming Conferences

1. 14th MOH-AMM Scientific Meeting 2022 in conjunction with 23rd NIH Scientific Conference on 19th to 21st July 2022, Theme: "NCDs: Bridging the Gap".

2. The 4th Tripartite Congress of Academy of Medicine of Malaysia (AMM), Academy of Medicine, Singapore (AMS) and Hong Kong Academy of Medicine (HKAM) cum the 55th Singapore-Malaysia Congress of Medicine will be held virtually from 22nd to 24th July 2022. Theme: Diversity and Community in Medicine

3. Malaysian Association for the Study of Pain (MASP), 8th Biennial Scientific Meeting. Virtual meeting on 29th to 31st July 2022.

4. MSA/CoA Annual Scientific Congress 2022. Hybrid at Shangri-La Hotel. Kuala Lumpur on 4th to 7th August 2022. Theme: MyAnaesthesia 2022: FOCUS (Forging Onwards to a Collaborative Unified Success.

5. ASMIC 2022 - Annual Scientific Meeting in Intensive Care at Shangri-La Hotel, Kuala Lumpur, Malaysia. 8th to 11th September 2022.

6. 16th Asian Australasian Congress of Anaesthesiologists (AACA). Coex, Seoul, Korea. 10th to 13th November 2022.

May we have the strength and resilience to overcome the potential widespread mental issues and mass disabilities in patients as well as health workers following the COVID-19 pandemic.

Stay healthy and ready always.

Message from the President of the College of Anaesthesiologists, AMM

Professor Dr Marzida Mansor

Malaysia entered the "Transition to Endemic" phase of COVID-19 on 1st April 2022, with all restrictions on business operating hours removed and prayer activities allowed without physical distancing. Our Prime Minister, Datuk Seri Ismail Sabri Yaakob, said the transition to the endemic phase is an exit strategy that would allow Malaysians to return to a near-normal life after nearly two years of battling the pandemic. We are grateful that the COVID-19 situation in Malaysia continued to be under control, with 99% of cases falling under Categories 1 and 2, according to the National Recovery Council and starting from 4th July 2022, My Sejahtera's Traveller Pass is no longer needed for Malaysians returning from overseas.

Following the favourable progress with the pandemic situation, the College had been busy with both virtual and face-to-face activities. The following are the activities that have been carried out by the CoA in the last three months:

CoA and the Malaysian Health Coalition (MHC) Activities
The College joined the Malaysian Health Coalition (MHC) in March 2020 when we realised that the health of our country depends on the unity among health professionals of all disciplines in addressing the scientific, 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.

On 17th March 2022, MHC members handed a memorandum to the Minister of Health, YB Khairy Jamaluddin, expressing our support for the Tobacco Generational Endgame proposal.

On 1st May 2022, a joint statement was issued on "Treading Cautiously with the Loosening of Restrictions" during the endemic phase.

On 27th June 2022, a joint statement on "Build Sustainable Solutions for Medicine Shortages" was released.

Parallel Pathway Postgraduate Programme
There will be a massive change to the parallel pathway (PP) programme in the third quarter of this year following the announcement by the Ministry of Health (MOH) to award a substantial number of scholarships to candidates who are doing the PP programme and this will include contract medical officers. Hence the PP training document 2019 that is available on the CoA website will be undergoing revision and an updated copy will be made available by September 2022.

Nevertheless, on 1st June 2022, we have successfully conducted the assessment of the FCAI Certificate of Completion of Training (CCT) at the Academy office premises in Bukit Jalil, Kuala Lumpur. Two days were dedicated to the vetting of the questions for the assessment. I would like to thank the specialists (examiners and coordinators) who are mainly from MOH who had been working very hard in order to ensure the quality and standard of the assessment. We hope in the future we will be able to include examiners from the universities and private institutions as well.

Since the inception of PP programme, three candidates had graduated from the PP programme (FCAI) with CCT that is registrable with NSR. We are planning to have the first CCT awarding ceremony to the candidates in conjunction with the coming MSA/CoA ASC on 5th August 2022. In the pipe-line, as promised, the CoA, the MOH and the Universiti Malaya in collaboration with the College of Anaesthesiologists of Ireland will be organising a preparatory course for MCAI viva/OSCE examination by late August 2022.

Proposal for Inclusion of Pain Medicine as a Sub-Specialty in the National Specialist Register and the establishment of Chapter of Pain Medicine under the CoA
A task force comprising representatives from various pain societies and groups in Malaysia is being formed to draw up the above proposal. Meanwhile, we would like to encourage pain specialists in Malaysia to join the CoA, as members in order to facilitate the formation of a chapter of Pain Medicine under the CoA.

Guidelines and Recommendations:
Pertaining to safety and quality assurance in Anaesthesia, this year. the CoA is working on one new project which is the "Recommendations on Ultrasound Guided Venous Access". This recommendation is developed by the Ultrasound SIG lead by its Convenor, Dr Hasmizy Muhammad. This recommendation is intended to improve

continued on page 60