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SingHealth DukeNUS ACADEMIC MEDICAL CENTRE
SURGERY

NEWSLETTER

SurgeOn

MAJOR NEWS:

THE SINGHEALTH SURGICAL COMMUNITY JOINS THE FIGHT AGAINST COVID-19

THOUGHT LEADERSHIP:

COVID-19 AND ACADEMIC SURGERY – OR WHY CLINICIANS SHOULD LEAD RESEARCH

With the advent of the COVID-19 pandemic, the Division of Surgery and Surgical Oncology had from February to July 2020 adopted a strategy of continuing with life and limb-saving surgery but postponing all non-critical procedures. We needed to increase 'surge' capacity at our hospital and release manpower and resources for COVID-19 measures. At the same time, we wanted to avoid depriving patients who needed critical surgery from receiving such surgery.

Prof Pierce Chow
Vice Chair (Research), Surgery ACP;
Senior Consultant, Hepatopancreatobiliary and Transplant Surgery, SGH, NCCS; Professor and Programme Director, Duke-NUS Medical School

The success of this policy depended on senior doctors on the ground making correct judgment calls on the cases to be postponed. Any misjudgment could lead to non-critical cases becoming critical and, patients being eventually admitted for emergency care with an increased risk of poor outcomes.

Data-driven approach

Our policy was in sharp contrast to the strategies of many hospitals worldwide which was to cancel all elective surgeries entirely.

Was our policy sound and to what extent have we succeeded, or failed? The answers to these are important as there is every possibility for second or third waves of the pandemic to occur in the immediate future. Hence, we assembled a team and conducted research to assess the effect of our 'surge strategy'.

We focussed on six high-volume surgical operations carried out from February to June 2020, including high-volume cancer surgeries (breast, liver, colon and rectum cancers) and non-cancer surgeries (abdominal hernia and gall-bladder).

Compared to similar surgeries carried out from February to June 2019, the research showed

- No significant difference in the number of cancer surgeries
- Decrease in non-cancer surgeries to one-third of the baseline but no significant increase in the number of patients who were admitted as emergency cases
- Patients admitted for emergency surgical care were not patients whose surgeries were postponed
- No increase in the number of patients opting out of scheduled surgeries

Our strategy was therefore effective and did not negatively impact on patient outcomes. This assures us that the same strategy can be usefully applied to meet future challenges.

Clinicians as researchers

It is critical that clinicians have the ability to carry out research to address challenges in healthcare, more so in the context of an academic medical centre as society depends on our research.

Besides providing data to support our policies, research plays an essential role in answering important clinical questions which only clinicians can identify.

For example, most clinicians know that the plasma protein called alpha-fetoprotein is found elevated in the blood of both pregnant women and patients with liver cancer. This provided us with the insight that the mechanisms adopted by the fetus to prevent being rejected by the mother's immune system may also play a role in the development of liver cancer, a very important cancer in Asia.

Leveraging on the platform of the National Medical Research Council Translational and Clinical Research Flagship Programme in Liver Cancer, our multi-disciplinary study which involved several Singapore institutions showed that liver cancer cells masquerade as fetal-like cells. We identified a pivotal reprogramming of the tumour ecosystem in human hepatocellular carcinoma that lets cancer cells achieve immune evasion and grow aggressively. These findings were recently published in the high-impact journal, *Cell*.

To me, this is what academic medicine is about – clinicians collaborating with different experts to lead critical research that improves our understanding of a disease and ultimately patient outcomes.

SGH has a large patient pool and provides fertile ground for research. While clinicians may feel overwhelmed by their caseloads, they are uniquely positioned to support research by enrolling their patients into research programmes. Not every clinician is inclined towards the "triple threat" – teaching, research and clinical work – but all clinicians can play a part in academic medicine.

'Triple threat', anyone?

A critical mass of academically oriented clinicians will, however, be required to lead academic medicine. We need more surgeons who can focus on and take deep dives into specific areas of unmet clinical needs. In my practice I converge my teaching, research and clinical work on liver cancer and hepato-pancreato-biliary (HPB) surgery. When I carry out research using patient samples and patient data, the results of my research improve my clinical practice. And I transmit this knowledge to my students and colleagues.

If we don't have a critical mass of clinicians doing research, we have to rely on research done by others in other places and on different patient populations – none of which may directly address our patients' needs. My patients also cannot benefit quickly from the findings. We have to do our own research to gain a better understanding of the diseases afflicting our patients. The resulting better-informed decision-making benefits our patients directly.

One silver lining of the COVID pandemic is a greater appreciation of how important clinician-led research is for society. The solid data underpinning our 'surge strategy' can be usefully shared with institutions in other countries that are at varying stages of the COVID-19 pandemic.

THOUGHT LEADERSHIP:

INNOVATION – DOING THINGS DIFFERENTLY

There are three things that make us good surgeons. The first is the right 'heartware'. By this, I mean core values. The next is good software – acquired through our learning and gaining of clinical knowledge. Finally, our hardware is the surgeries and procedures we perform in our work.

Prof Hsu Pon Poh

Deputy Vice Chair (Clinical), Surgery ACP; Senior Consultant, Otorhinolaryngology - Head & Neck Surgery, CGH; Clinical Professor, Duke-NUS; Chair Professor, Singapore University of Technology and Design (SUTD)

Similarly, good academic surgeons need to bring together their teaching and clinical expertise with research and innovation. When there is convergence of these aspects, we can achieve value that impacts positively on our population.

Why innovate?

To me, innovation means the deliberate applications of knowledge and creativity to derive greater or unique values from finite resources. Innovation is about the courage to take the harder and, at times, more treacherous road, that leads us to discovery, with the ultimate aim of serving our patients better.

In a tiny country lacking natural resources and land like Singapore, our human capital is our most valuable resource. This is why we value upskilling of our workforce and lifelong learning of different skillsets for all. This is not an option. It is a necessity for us to survive as a country.

This applies too to surgeons. It is not enough to work hard, we need to work smarter, and we need to work together. We are already leveraging on digital transformation to improve our healthcare delivery. We also need our service quality, patient experience and clinical outcomes to be first-class

To do this, we must do things not just efficiently but differently. We need to constantly innovate. This is where I firmly believe we can shine.

Collaborating for the greater good

A good example of successful innovation is Singapore's creative solutions during the COVID-19 pandemic. The number of quality healthcare innovations developed at incredible speeds show us how important it is to have the right convergence of key factors like clarity of purpose, leadership, teamwork and courage.

Innovation is also about a broad mindset change, to always be better than yesterday in all aspects. In Singapore, one area among many areas of innovation (processes, devices, infrastructures, data and technology, etc) that we are looking at is in surgical equipment, which is close to surgeons' hearts. Currently, we use mainly foreign-made devices in healthcare or the OT but we started asking ourselves a while back why we did not have many of our own locally-made equipment or devices. We now have different experts like engineers, computer or data scientists and clinicians working together to develop our own surgical and healthcare tools. This synergy from our interdisciplinary collaborations will bear fruit in the long term and be for the greater good for Singapore and beyond.

An appetite for risk

Innovators have to be bold, ambitious and enthusiastic in looking for new ideas while being mindful of risks and uncertainties. Without an appetite for risks, it is hard to move forward so we need to be able to turn crises into opportunities, and deal with crises as they arise.

As surgeons, many of us deal with difficult decision-making or risk-taking when we attend to our patients, perform surgeries, and face complications that inevitably occur. After all, not all patients respond in the same way to diseases or treatment so surgeons tend to expect the unexpected.

In this sense, the innovative DNA already exists in every surgeon, we just need to recognise, embrace and fully utilise it. With a spirit of innovation, we can ignite everyone's passion for creativity to do things differently.

MAJOR NEWS:

THE SINGHEALTH SURGICAL COMMUNITY JOINS THE FIGHT AGAINST COVID-19


THE STRAITS TIMES SINGAPORE | HEALTH

Coronavirus: SGH doctors come up with safer, quicker ways for large-scale testing


Singapore

A timeline: Singapore's biggest COVID-19 cluster at S11 dormitory closes

Foreign workers at the S11 Dormitory @ Punggol in Singapore wave for a photograph, on Apr 6, 2020. (Photo: AFP/Roslan Rahman)


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Sengkang General Hospital Chairman works on frontline to coach nurses & swab patients

Admirable.

Ashley Tan | June 01, 06:17 PM

SGH campus's involvement in providing primary care at the purpose-built dormitories stretched from April to September this year. Known as medical mobile teams, they comprised doctors, nurses, pharmacists/pharmacy technicians and administrative support personnel.

Assoc Prof Chan Chung Yip
Head, Department of Hepatopancreatobiliary/Transplant Surgery
Singapore General Hospital (SGH)
& National Cancer Centre Singapore (NCCS)

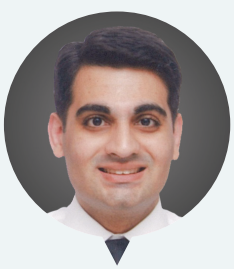
It was heart-warming to see so many of our colleagues value the significance of this effort and step forward for repeated stints. Aside from having to learn how to take proper swab samples, it was particularly challenging as we practise in a tertiary care institution and are thus less involved in primary care work. The physical environment that the teams were working in was also less than ideal, as many of the medical posts were tents set up in the carpark, between blocks of dormitories and exposed to the elements.

Despite the limitations, there was so much positive energy in the teams that made the work purposeful and enjoyable. Through the months of toil and sweat (literally), a very strong camaraderie was established in the teams. Lunch time was always eagerly awaited, not just for well-deserved rest, but also for the friendly banter and bonding that happened over the shared meals. Alumni of the various dorm teams were "inducted" into WhatsApp chat groups, where news in the media and happenings on site continued to be shared and regaled.

Having seen the contagion blaze through the dormitories in the early days, to the eventual embers and last whiff of smoke, it was with much relief that the work provided by our colleagues was handed over to operators in the private sector. We can all give ourselves a pat on our back and beam with quiet pride that we took the bull by the horns and contributed to taming a formidable foe.

Dr Tousif Kabir
Consultant, Department of General Surgery
Sengkang General Hospital (SKH)

The COVID-19 pandemic is arguably the biggest threat that humanity has faced in recent history. Dubbed 'the ultimate equalizer', it respected no borders or boundaries, afflicting equally the young and the old, the rich and the poor. In late March 2020, Singapore saw a sharp spike in the number of COVID-19 cases, arising primarily from outbreaks in dormitories where thousands of migrant workers (MWs) reside. The infection spread rapidly due to the close living quarters and communal facilities shared by residents.



Dr Raj Tiwari
Consultant, Department of Urology
Sengkang General Hospital (SKH)

In an effort to flatten the curve and limit further community spread, the MWs were contained within these facilities and medical teams were sent in to perform swabbing and serology testing of the dormitory residents. Healthcare staff from SKH readily stepped forward to be a part of the SingHealth team deployed to the dormitories. Being situated close to the S11 'Megadormitory', which housed some 13,000 MWs, our primary focus was on testing the residents there. The SKH task force comprised doctors, nurses and allied health professionals, many of whom were part of the Surgery Academic Clinical Programme (ACP). These dormitory operations went on for several weeks, due to the sheer number of MWs present, and were mentally and physically taxing for volunteers. Medical teams faced risks of viral transmission in their daily interactions with thousands of COVID-19 positive patients. Donned in their full PPE for prolonged periods, they also endured extreme temperatures and faced the risk of dehydration – we even had two cases of heat exhaustion! Despite this, our volunteers soldiered on tirelessly, sacrificing even their weekends and public holidays to support the operations. Team spirit

was essential in the running of these operations as well, as our colleagues in hospital would readily cover the additional clinical duties of those stationed at the dormitories. We are happy to report that on 8th August 2020, as reported by Channel NewsAsia, the S11 cluster was officially closed.

These operations provided volunteers with unique, intangible benefits. The experience of working hand-in-hand in the field with healthcare workers (HCWs) from other departments and hospitals, and casting aside rank to perform the same basic medical jobs regardless of individual specialty cultivated a sense of solidarity and resilience like no other. In a true definition of leadership by example, several senior institution leaders stepped up readily to participate regularly in these operations as well, which inspired many others to join in as well. Finally, the very act of looking after the welfare of thousands of migrant MWs who had dedicated their lives to building Singapore brick by brick, some of whom had even helped to build SKH, rekindled our passion for medicine and served as a timely reminder of our true purpose in this great profession.

Tackling the COVID dormitory outbreak: **Our Community Care Facility (CCF) experience**

Dr Jay Lim
Consultant, Department of Urology
Singapore General Hospital (SGH) &
National Cancer Centre Singapore (NCCS)

I was among the first batch of doctors who volunteered to set up four halls at the Singapore Expo as a Community Care Facility (CCF@ Expo) in late April. The brief for the 12 of us was simple - two weeks, four expo halls, 60 doctors, 200 SingHealth Angels, comprising nurses and allied health professionals, to care for 3,200 COVID-19 positive patients. To sweeten the deal, our colleagues at the Woodlands Health Cluster and Singapore Armed Forces would orientate us and to show us the ropes.

"Got free parking?" I wryly asked.

Eventually, we took over after just one to two days of shadowing and managed the halls from mid-May 2020 with fewer manpower than planned. From then until July 2020, our halls admitted and discharged more than 7,000 patients. At its peak, a team of around 100 provided medical care to 2,900 patients daily. We somehow did it without wanting to "murder" each other.

A collective spirit of dedication, commitment and "can do" attitude among those supporting this operation held the halls together. There are too many to name, but the staff from across professions who readily jumped in to assist were certainly amongst the best SingHealth had to offer.

It is heartening to look back and say we did our share in the fight against COVID-19. Only by recognising what we learnt from past pandemics, can we then work out the unknown to derive the equation necessary to be ready for the next pandemic, and save lives.

* *This article was originally published in TODAY - Commentary on 11 December 2020*

MAJOR NEWS:

SKH MULTI-DISCIPLINARY UROLOGY ONCOLOGY CLINIC

Prostate, kidney and urinary bladder cancers are amongst the top ten cancers in Singaporean men and are the 5th and 9th most common cause of cancer mortality. These malignancies have increased in annual incidence in the past decade based on the Singapore Cancer Registry (November 2019).

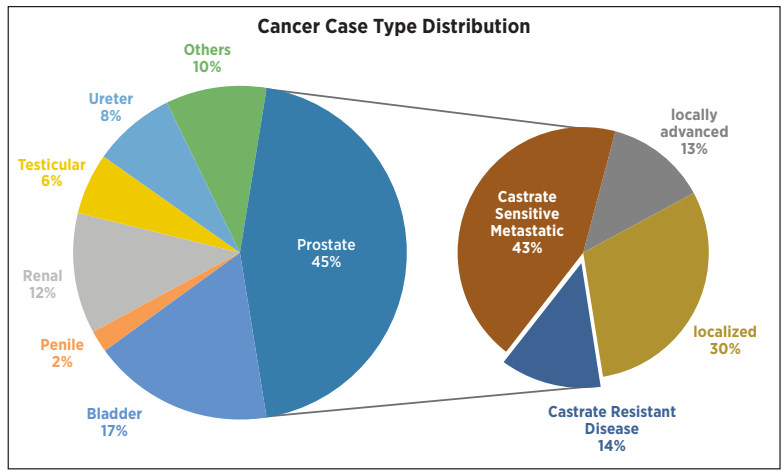


Figure 1: Distribution of patients in the MDT clinic

The need to personalise care in genito-urinary cancers have become increasingly relevant as the evidence for targeted agents and immunotherapy mature, together with the wider biomarkers in risk stratification. This clinical thrust complements the need for prudent healthcare expenditure, minimising adverse effects from treatment and improving quality of life outcomes. Multi-disciplinary clinical collaboration is fundamental in pursuing the achievement of these outcomes.

The multi-disciplinary team (MDT) clinic is not a recent innovation, but represents an existential effort by faculty from the Department of Urology, SKH and the Departments of Medical Oncology and Surgical Oncology NCCS, to collaborate and coordinate clinical care for patients with genito-urinary cancers.

Most clinicians appreciate the value of clinical and academic discussions at tumour board meetings. However, there are intrinsic limitations of decision-making in the absence of patient and caregiver feedback without understanding social and personal preferences. Clinicians also recognise the fundamental need for in-person assessment of the patient in the consultative process for holistic care.

The MDT clinic is a one-stop clinic where the patient can meet all three specialities in person. This facilitates multi-speciality discussion prior to patient consult and expedites real-time decision-making by clinician and patient, while reducing the need for multiple visits over different timepoints.

Between December 2018 to December 2019, a pilot Urology-Oncology MDT clinic was initiated and 51 patients attended over 12 monthly sessions, comprising a majority with prostate, urothelial or kidney cancer (Figure 1).

The benefits of the MDT clinic included reduced time between clinic consult to initiation of therapy (radiation or systemic therapy), with a median of eight days. There was also a median reduction of 64 minutes' travel time per patient, compared to a calculated (traditional) model of three speciality visits per patient. This benefit was evident despite 65% of patients living in close proximity to SKH.

A patient survey, using a five-point Likert scale, was carried out focusing on the following domains of interest: adequacy of medical care, time savings related to the MDT clinic, and facilitation of decision making towards therapy. The outcomes showed a median score of four (satisfied) across these domains.

The other benefits of the MDT clinic include a good platform for residency training, cross-specialty education and clinical trial recruitment. In the post-COVID-19 pandemic era where social distancing considerations predominate, it can also reduce the overall number of clinical touch points, compared to a traditional model of multiple outpatient visits.

Figure 2: A team sport – From left: A/P Melvin Chua Lee Kian (DRO), A/P Ravindarn Kanesaran (DMO), Dr Raj Tiwari (Urology, SKH)

These benefits clearly outweigh the shortcomings arising from the weighty logistical and administrative coordination required for a one-stop practice.

With these outcomes from the pilot initiative, the team (Figure 2) aspires to continue this service and achieve more holistic outcomes in alliance with other partners such as physiotherapists, dieticians and psychologists.

Dr Lee Lui Shiong
Head & Senior Consultant
Department of Urology
Sengkang General Hospital (SKH)

EDUCATION NEWS:

INTERPROFESSIONAL COLLABORATION AND PRACTICE (IPCP)

IN GENERAL SURGICAL SETTING (ELEARNING MODULES IN WIZLEARN)

Assoc Prof Ong Hwee Kuan
Associate Professor, Singapore Institute of Technology (SIT)
Senior Principal Physiotherapist, SGH AM Lead (Allied Health), Surgery ACP

Objectives :

1) To enhance knowledge and appreciation of the roles and practices of selected healthcare professionals ; and
2) To reflect on the complex healthcare environment and the need for interprofessional practice

Instructional strategy:

Case-based learning to illustrate how the optimal care of a surgical patient is based on interdependent practices of multiple healthcare professionals

No one would disagree that poor interprofessional coordination and collaboration can adversely affect the quality and safety of patient care. In tandem with SingHealth's strategic initiative to invest in Interprofessional Education (IPE) to help resolve collaborative failures, a group of nurses, Allied Health Practitioners (AHP) and surgeons gathered in January 2018 to brainstorm ways to introduce IPE in clinical settings. Amidst the diverse formats and educational strategies in IPE, the team decided on a pragmatic approach to develop an eLearning module, considering the long-term sustainability and the resources required. The planning team, consisting of nine health care professionals, put together a five-module Interactive eLearning package that uses a case study approach to illustrate how the optimal care of a surgical patient is based on the interdependent practices of multiple healthcare professionals.

The package was launched in March 2019 on the SingHealth Wizlearn platform and has been live for a year and a half. Since then, 250 users have logged in (67% nursing, 4% medicine and 25 % AHP). Out of all the feedback received, 96% of the respondents would recommend this eLearning programme to their peers. We appreciate your help to disseminate this learning package to your student learners.

While we celebrate the implementation of this eLearning module, we ought to be mindful of the short-lived & limited impact of a stand-alone eLearning module. What it really takes to build a strong generation of Interprofessional Collaboration and Practice (IPCP) practitioners is that each of us, in our daily practice, model the principles and premises of interprofessional education and collaborative practice.

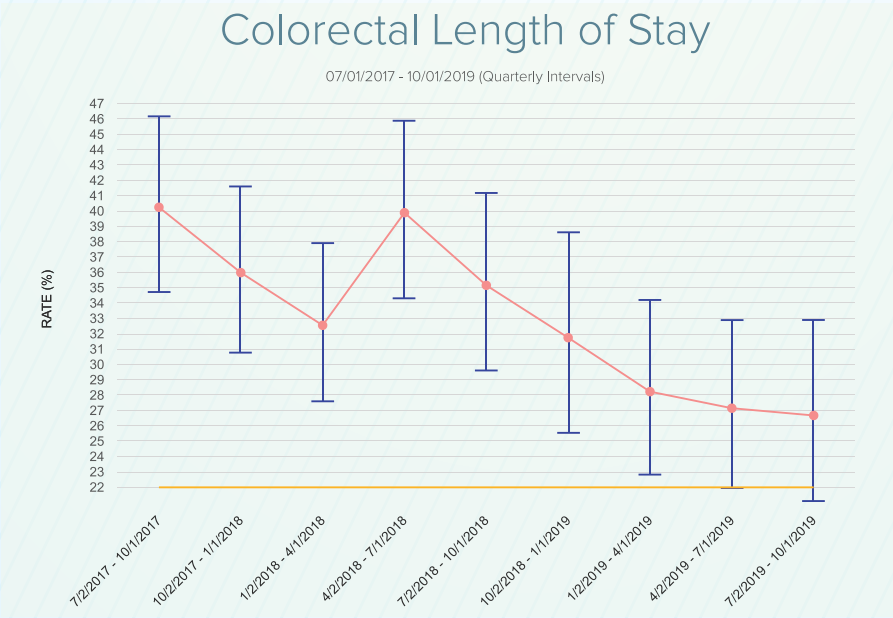
Check out the eLearning package from the SingHealth Online Course catalogue:
https://elearning.singhealthacademy.edu.sg/SH/Course/Catalogue.aspx

CLINICAL NEWS:

NSQIP UPDATES

It has been three years since the implementation of The American College of Surgeons - National Surgical Quality Improvement Program (ACS NSQIP) in SGH. The NSQIP team, led by Surgeon Champion – Assoc Prof Ong Hock Soo, comprises five Surgical Clinical Reviewers (SCRs), Surgeon representatives from various departments and divisional administrators from SGH's Division of Surgery and Surgical Oncology.

We started with collecting clinical data for seven procedure-targeted modules: Appendectomy, Colectomy, Proctectomy, Esophagectomy, Hepatectomy, Pancreatectomy and Thyroidectomy, with the addition of Bariatric in September 2018. The positive outcomes, such as the reduction in ALOS for Colorectal after implementing Enhanced Recovery After Surgery (ERAS), as shown by the NSQIP risk-adjusted smoothed rate report, have allowed us to expand our portfolio with the recently added three procedure-targeted modules: Hysterectomy/ Myomectomy, Total Hip Arthroplasty and Nephrectomy.



Our results for the year of 2019 revealed several exemplary areas and areas of opportunities:

EXEMPLARY

(compared to average NSQIP Hospitals)

Based on All Cases of 8 Procedures

- Ventilator > 48 Hrs
- ROR

AREA OF OPPORTUNITY

Length of Stay (LOS)

(date of Surgery to date of Discharge)

- Whipple Pancreatectomy
- Colectomy
- Esopagectomy
- Nephrectomy

(Cohort excluded those with defined morbidities and morbidities present at time of surgery)

KK Women's and Children's Hospital (KKH) has begun implementation to join SGH in this NSQIP journey, while plans for Changi General Hospital (CGH) are underway. With cluster-wide implementation, we look forward to reaping the greater benefits within SingHealth!

GLOBAL HEALTH INITIATIVE - PANDEMIC RESPONSE

GIFT FROM MUSIM MAS GROUP

The COVID-19 pandemic has had extensive impact on the health system globally. As the largest and leading tertiary hospital in Singapore, SGH is in the forefront of the fight against COVID-19 and understands that learning, discovery and research will serve as important resources in this ongoing pandemic and future preparedness.

The Global Health Initiative – Pandemic Response led by Division of Surgery and Surgical Oncology received a **generous gift of S$1,000,000** from Musim Mas Group, towards the development of innovative models of care and research that look into devising better systems to tackle the COVID-19 pandemic and future pandemics.

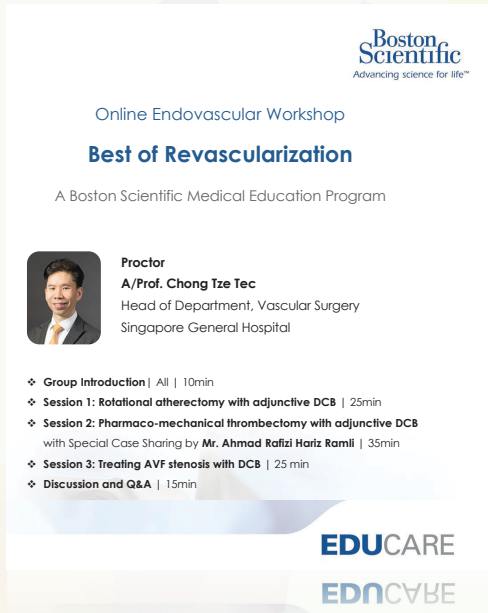
There are two key focus areas, namely, the study into **pandemic impact to build resilience** now and for the future, and **innovation and innovative models of care** that can be used in this pandemic and beyond. This will also shape and drive informed decisions during a pandemic and address the well-being of healthcare workers and affected patients.

As one of the world's leading sustainable palm oil corporations, the **Musim Mas Group** adopts **sustainability** as a core value and has a sustainability policy that commits itself to the principles of "no deforestation" and social contribution to the lives of the local community. The company also aims to make positive impact on the local communities in the areas where they operate.

We are grateful to Musim Mas Group for their support and generous donation.

GLOBAL SURGERY PROGRAMME

WORKSHOP SPONSORSHIP FOR REGIONAL PARTICIPANTS: ONLINE ENDOVASCULAR WORKSHOP



The **Global Surgery Programme**, by the SingHealth Duke-NUS Surgery Academic Clinical Programme (Surgery ACP), promotes the transfer of surgical knowledge and skills from medical practitioners in the ACP to clinicians and healthcare professionals in countries that have fewer resources and help to advance the standards of healthcare and health services there.

On 9 July 2020, an online endovascular workshop, titled **'Best of Revascularization'**, was facilitated by SGH's Head of Department for Vascular Surgery, **Assoc Prof Chong Tze Tec**. The workshop programme was accredited by Boston Scientific, which provides a range of training and education programmes for medical practitioners and healthcare professionals.

Under the auspices of the Global Surgery Programme, vascular surgeons from Southeast Asian countries, such as Malaysia, Thailand, Vietnam and Philippines, participated in the workshop. The three main topics discussed during the session included rotational atherectomy with adjunctive drug-coated balloon (DCB), pharmaco-mechanical thrombectomy with adjunctive DCB and treating arteriovenous fistulae (AVF) stenosis with DCB. The interactive discussions included a case sharing by one of the participants.

Due to the COVID-19 pandemic, many activities have been suspended, including face-to-face conferences and workshops. Through online workshops like 'Best of Revascularization', Global Surgery Programme hopes to continue educating and informing surgeons around the world on the latest methodologies and technologies available for treatment of various medical conditions.

RESIDENT'S CORNER

2020 GRADUATION

PROGRAMME Message

Congratulations on achieving this milestone! You have made the programme proud and we are happy to have accompanied you for these 5 years of training. Best of luck for your future!

Graduands
Top row from right: Dr Koo Chee Hoe, Dr Darren Chua, Dr Darius Aw
Center: Dr Benjamin Poh

GS Residency Programme

First from left: Dr Lasitha B. Samarakoon (Graduand)

Dr Koo Chee Hoe (left) and
Dr Lee Chee Meng (right)

Dr Darius Aw (left)

MEMORIES IN Residency

Dr Du Jingzeng
Urology

I remember the moment I became a resident and the moment I passed the exam and completed the journey. The six years of hard work has paid off and I feel very happy and excited for what is to come!