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DR TINA TAN

Editor

Dr Tan is a psychiatrist in private practice and an alumnus of Duke-NUS Medical School. She treats mental health conditions in all age groups but has a special interest in caring for the elderly. With a love for the written word, she makes time for reading, writing and self-publishing on top of caring for her patients and loved ones.



Advocacy involves supporting or championing a certain cause. In SMA's case, the cause is that of our fellow doctors as we practise within the boundaries of Singapore's ever-changing medical landscape. SMA's beginnings stem back to roughly the same time as Singapore's independence (give or take a few years), so it is poignant that, as our nation celebrates 60 years of independence, we capture the advocacy work that SMA has been involved in. The timeline featured on page 16 is a reminder that we stand on the shoulders of invisible giants, people who sought to improve the standards of clinical practice while supporting the needs of clinicians "on the ground". This is also a call for those with a passion for such work to join us, if you are so inclined. You will come to realise that while the going can be slow, hearts are sincere, and the impact we have is real.

Additionally, in honour of SG60, we invited A/Prof Cuthbert Teo to contribute an article on the history of medicine in Singapore. This Editor acknowledges A/ProfTeo's transparent use of artificial intelligence (AI) to assist in generating a helpful overview on the subject amid his busy schedule. Admittedly, we at SMA News are only just beginning to put together our own guidelines on AI, authorship and publishing (akan datang, as the saying goes). Hence, this is not the time to talk about that yet. What is valuable to note is the rich trove of original sources that have been referenced, many of which were A/Prof Teo's own writings for his series "A Glimpse into the Past: Medicine in Singapore", which has enabled us to have a historical overview akin to that of SMA's advocacy work.

Enjoy.

A/PROF CUTHBERT TEO

Guest Editor

A/Prof Teo is trained as a forensic pathologist, with a special interest in family violence and child abuse. He volunteers in the social service sector, and also sits on the Board of the Singapore Children's Society in his personal capacity. When visiting other countries, he always tries to plan multiple long hikes. The views expressed in this article are his personal opinions.



In the article "K-Dramas Vs Arsenic Poisoning Today", the authors mention the fictionalised attempted murder by arsenic, of the 14th century Toghon Temür (妥懽帖睦尔), the last Emperor of the Yuan Dynasty, who made Empress Ki his third consort. On a recent trip to Tokushima, Shikoku, I had met a survivor of arsenic poisoning and was reminded of three recent historical arsenic poisonings in Japan.

The first occurred in Toroku, Miyazaki, Kyushu. For about 40 years until 1962, arsenic trioxide from an arsenopyrite mining company was intermittently discharged into a river from which villagers drew drinking and irrigation water. From the 1970s, neurological symptoms related to chronic arsenic exposure began to be documented.1 The second episode occurred in Namiki-cho, Niigata, Honshu. In 1959, a well was found to be contaminated with arsenic trisulphide with wastewater from a factory producing the King's Yellow pigment.2 The third episode in 1955 was the contamination of Morinaga infant milk powder by arsenic during the manufacturing process in its Tokushima factory. Thousands of infants were affected, and over a hundred died.3

The arsenic poisoning incidents are part of what the Japanese described as kogai (公害) diseases. The term kogai describes the interference of air and water by human activity, resulting in damage to the environment and human health. The so-called four major pollution diseases in Japan include the itai-itai disease (cadmium poisoning, Toyoma, 1912), Minimata disease (organomercury poisoning, Kumamoto, 1956), Niigata-Minimata disease (organomercury poisoning, Niigata, 1965) and Yokkaichi disease (sulphur dioxide-related asthma, Mie, 1961).4 It is well worth reading more deeply the Japanese kogai studies. They are a masterclass of epidemiological studies that clarified disease causality. •

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THE HISTORY [AND FUTURE] OF MEDICINE

Text by A/Prof Cuthbert Teo, Editorial Advisor

A/Prof Teo is trained as a forensic pathologist, with a special interest in family violence and child abuse. He volunteers in the social service sector, and also sits on the Board of the Singapore Children's Society in his personal capacity. When visiting other countries, he always tries to plan multiple long hikes. The views expressed in this article are his personal opinions.



I wanted to see what a chatbot's perspective of the history of medicine in Singapore might be when I was preparing this article, so I asked Google Al Overviews to summarise the history of medicine in Singapore, as well as to tell me about medicine in Singapore in the past 60 years. These paragraphs were what I got in response, each followed by a timeline of events.

"Singapore's medical history began with colonial doctors treating Europeans and the military in the early 19th century, while locals relied on traditional healers.

Organised public health efforts started in the late 1830s, leading to the establishment of Singapore's first medical school in 1905, which later became the King Edward VII College of Medicine and eventually the Faculty of Medicine at the National University of Singapore (NUS). Post-independence, the focus shifted to developing a robust, publicly financed healthcare system with elements of social risk-pooling through schemes like Medisave and Medishield Life."

"Over the past 60 years, medicine in Singapore has transformed from a rudimentary system tackling infectious diseases into a world-class, multi-tiered healthcare system focused on chronic diseases and an ageing population. This progress was driven by strategic government policies, medical breakthroughs and substantial investment in infrastructure."

Although the results were quite brief, it was not too bad. The Google Knowledge Panel told me that the Google AI mode visited ten websites, including SMA News. The generated references included parts 1, 3, 7 and 14 of the 14-part series "A Glimpse into the Past - Medicine in Singapore", published in the newsletter.1,2,3,4

The Al mode's references even included materials that I had forgotten about or had not read before:

- · The Remarkable Healthcare Performance in Singapore by M Ramesh, et al.⁵
- Singapore's health-care system: key features, challenges, and shifts by Tan Chor Chuan, et al.6
- "The Transformation of Singapore's Healthcare System" YouTube video by SingHealth Duke-NUS Global Health Institute.7
- Singapore's Health System: Familiar **Challenges and Innovative Solutions** in a Unique Context by Michael Gluck, et al (which reflected on the potential relevance of Singapore's healthcare system for the US).8
- Lessons From Across the Pacific -Health Policy Debates Worth Having, Part 1 by Dave Chokshi (an essay which features the Healthier SG campaign to strengthen primary care in light of an ageing population and rising healthcare costs).9

Brief overview of the history of medicine in Singapore

19th century

1819

• Thomas Prendergast, a British doctor, arrived in Singapore and provided the first Western medical services.

1821

• The first General Hospital was established in a small shed.

1830

• The first rural health officer was appointed.



Early to mid-20th century

 The Straits Settlements and Federated Malay States Government Medical School was established (renamed King Edward VII Medical School in 1921).

1905

• The medical school amalgamated with Raffles College to form the University of Malaya, with its medical faculty becoming the Faculty of Medicine.

1949

1950s

• Subspecialty units were established, leading to the first open-heart surgery in 1967 and the establishment of the Department of Neurosurgery in 1972.

1960s

• The University of Singapore was founded in 1962. It merged with Nanyang University in 1980 to become the National University of Singapore.

1970s

- Nationwide vaccination campaigns were conducted for disease control.
- Family planning programmes were introduced to manage rapid population growth.
- The nation's network of government-run polyclinics and centralised healthcare services were expanded under the Ministry of Health.

Late 20th century to present

- The Central Provident Fund was introduced to enable mandatory personal savings in Medisave accounts for hospitalisation and healthcare costs.
- The "3M" financing framework consisting of Medisave, MediShield and MediFund was implemented to assist Singaporeans with their medical financing needs.
- Public hospitals were restructured, allowing greater autonomy to deliver better and more efficient services.
- Specialist centres such as the Singapore National Eye Centre and the National Heart Centre were opened.

1980s to 1990s

2000s

- Following the Healthcare 2020 Masterplan revealed in 2012, the healthcare system was reorganised into Regional Health Systems to provide integrated care by connecting hospitals with community partners.
- The use of technology was expanded significantly, including real-time monitoring through wearable devices and robotic-assisted surgery for precision procedures.
- Schemes like the Community Health Assist Scheme were introduced to provide subsidies for outpatient care at private GP and dental clinics.
- Introduced packages like the Pioneer Generation and Merdeka Generation packages to provide additional subsidies and support for the elderly.



Appreciating our history

Is there a need for health professionals to be familiar with the history of medicine? There are various often-cited reasons,10 which include:

- 1. Learning from the past and preventing past mistakes.
- 2. Documenting outstanding events from the past and attributing credit accurately.
- 3. Understanding the context of the evolution of medical and scientific knowledge.
- 4. Instilling pride and identity.

Personally, why am I interested in the history of medicine?

Firstly, I have a keen interest in the history of science and medicine. The stories of the history of medicine are like the detective stories of Sir Arthur Conan Doyle and Agatha Christie. The unravelling of medical mysteries which fascinate me, to name but two, include:

Levine and Stetson investigating the mystery of a stillbirth in a woman who received a blood transfusion

- from her husband,11 and Landsteiner's blood transfusion experiments in the rhesus macaque.12 See Levine's biography (pages 323 to 347) in the downloadable book Biographical Memoirs: Volume 63.13
- The discovery of prion disease: the strange story of scrapie and Merino sheep;14 to the description of Creutzfeldt-Jakob disease in the 1920s;15 to the 1957 report by Gajdusek and Zigas of the trembling (kuru) disease or laughing death in Papua New Guinea;16 to the 1960s hypothesis of endocannibalism by Matthews, Glasse and Lindenbaum;17 to Gajdusek's 1976 Nobel Prize and his 1997 imprisonment for child molestation;¹⁸ to the coining of the term "prion" in the 1980s19 and Stanley Prusiner's 1997 Nobel Prize.20 Read about the story of kuru,21 the life of Carleton Gajdusek,22 and the skepticism that Stanley Prusiner faced.²³

Secondly, the history of medicine is intertwined with the evolution and development of critical thinking:24

the questioning of tradition, the development of scientific inquiry, professional development, improving healthcare quality and fostering social responsibility. If you have the time, listen to this 90-minute talk: "Making the Case for History in Medical Education" by David Jones, a psychiatrist at Harvard Medical School and Professor of the Culture of Medicine at Harvard University.25

Looking ahead

What of the future of medicine? The future is very exciting; for example, the World Economic Forum mentions expectations of revolutionary advances in precision medicine, artificial intelligence, gene editing, wearable technology, robotics, additive manufacturing, regenerative medicine, healthy longevity, drug discovery, clinical trials planning and execution, medical image recognition, automated document processing, electronic health records interoperability, supply chain augmentation and supply chain risk assessment, public health surveillance, and resource allocation.26 ◆

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A Healthy Private Healthcare **Ecosystem is** Beneficial

Text by Dr Ng Chee Kwan

The Government has noted that due to rising insurance premiums, more patients with private insurance are opting for subsidised public healthcare, and public healthcare will come under increasing pressure as a result.1

Is driving patients with private insurance to subsidised public healthcare the best way forward?

Data from the Singapore Department of Statistics shows that between 2020 and 2024, the number of acute private hospital admissions was relatively stable, rising from 111,648 to 118,356 admissions, which is an increase of 6%. However, within the same period, the number of acute public hospital admissions rose from 444,863 to 526,589, an increase of 18%. Furthermore, the number of attendances at public hospital specialist outpatient clinics rose from 4,478,648 to 5,505,777, an increase of 23%,2

In 2024, there were 9,903 public acute hospital beds.3 A back-of-envelope calculation shows that on average, each public acute hospital bed would have been used for treatment of 53 patients per year, or one patient per week. This is consistent with the reported national average length of public hospital stay of seven days.4 Naturally, acute public hospitals would come under pressure if there is further increase in hospital admissions. There are ongoing efforts by the authorities in expanding public healthcare capacity by building new

hospitals and reconfiguring existing ones, but it will take time to ramp up capacity.

So, directing patients with private insurance to public hospitals is not ideal at this juncture. In the meantime, what can be done?

The Government is exploring the possibility of a new not-for-profit private hospital and introducing more benchmarks for hospital charges. These are worth supporting but again, will take time to be implemented.1

Ultimately, insurance premiums need to be lowered, especially for those in the older age group who are more likely to suffer large premium increases but also require hospital treatment. Some insurers have introduced more affordable riders with a larger deductible or co-payment.

Just as benchmarks are in place for doctors' fees, I feel that there should also be a benchmark for insurers to ensure that the pricing for premiums is appropriate and justified. I had mentioned this approach in my October 2024 column and it is worth bringing it up again. Insurers could be required or recommended to fulfil a certain claims ratio; ie, a certain percentage of the total premiums collected must be paid out in claims. This ensures that most of the premiums fund healthcare rather than overheads. Mandating a claims ratio provides transparency and builds trust.

A strong private healthcare ecosystem benefits everyone by giving patients more choices while easing the strain on public hospitals. Hopefully, we can manage private health insurance costs more effectively, so that it remains sustainable. •

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Dr Ng is a urologist in private practice and current President of the SMA. He has two teenage sons whom he hopes will grow much taller than him. He has probably collected too many watches for his own good.



HIGHLIGHTS

From the Honorary Secretary

Report by Clinical Asst Prof Benny Loo Kai Guo

Dr Loo is a paediatrician in public service with special interest in sport and exercise medicine. He serves to see the smiles on every child and athlete, and he looks forward to the company of his wife and children at the end of every day.



Reminder on PC renewal in 2025

Members who are renewing your Practising Certificate (PC) on 31 December 2025 are strongly encouraged to submit your application to Singapore Medical Council (SMC) by the end of November 2025. This will help you avoid the late application fee, which SMC will charge for applications submitted in December 2025.

For those attempting SMA's mandatory medical ethics (MME) programmes, please ensure that you complete them by 31 October 2025 at the latest. SMA will submit your MME attendance by 15 November 2025.

For those on the Employer-Pay-On-Behalf scheme where your employer is paying for your PC renewal fee, you will be required to submit your PC application by 15 October 2025. Please ensure that you complete SMA's MME programmes by 30 September 2025 and we will submit your MME attendance by 7 October 2025.

MASEAN 2025 in Thailand

The 20th Medical Association of South East Asian Nations' (MASEAN) Mid-term Meeting was held at Chonburi, Thailand between 17 and 19 July 2025. As MASEAN Secretariat, SMA supported the running of the conference together with the host, the Medical Association of Thailand.

Representatives from the MASEAN member associations presented their respective country reports and gave presentations on this year's theme, "Harmful Inhalational Volatile Substances: with Special Reference to E-cigarettes and Cannabis".

The MASEAN Group of Journals also met concurrently to discuss various initiatives and projects.

The full event report will be available in the September 2025 issue of SMA News. SMA is a member of three regional/international bodies, namely MASEAN, the Confederation of Medical Associations in Asia and Oceania, and the World Medical Association.

SMA representatives in SMC

SMA President Dr Ng Chee Kwan was appointed as a member of SMC. His term will be from 1 July 2025 to 30 June 2028.

SMA Council member Dr Tan Yia Swam was elected as a member of SMC. She will serve a three-year term from 11 October 2025.

We extend our congratulations to both Dr Ng and Dr Tan.

HKMA visit to Singapore

On 17 August 2025, SMA welcomed a delegation from the Hong Kong Medical Association (HKMA), led by its two vice-presidents and honorary secretary along with advisors and members of the HKMA medical students subcommittee. The meeting fostered meaningful exchanges on national healthcare ecosystems, public health and medical education. The visit to the SMA office concluded with our visitors enjoying a local zi char dinner, where lively discussions continued and new friendships were formed



Dr Victor Yeung, Vice-President, HKMA presents Dr Ng Chee Kwan, President, SMA with a commemorative memento

HONOURING EXCELLENCE

The 66th SMA Council warmly congratulates our Members who are recipients of the National Day Award 2025.

The Public Administration Medal (Silver) (Bar)

Prof Cheah Tiang Seng Jason

Deputy Group Chief Executive Officer (Strategy, Planning, & Resourcing) NHG Health Chief Executive Officer Woodlands Health Ministry of Health (MOH)

The Public Administration Medal (Bronze)

Dr Harold Tan Keng Boon

Director National Mental Health Office МОН

A/Prof Chong Bee Kiang

Senior Consultant Diagnostic Radiology (Clinical) Tan Tock Seng Hospital NHG Health, MOH

A/Prof David Foo Chee Guan

Clinical Director NHG Heart Institute Senior Consultant Cardiology Tan Tock Seng Hospital NHG Health, MOH

Adj Asst Prof Lee Liang Tee

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A/Prof Alan Ng Wei Keong

Senior Consultant Respiratory and Critical Care Medicine Tan Tock Seng Hospital NHG Health, MOH

A/Prof Vernon Yong Khet Yau

Clinical Director NHG Eye Institute Senior Consultant Ophthalmology (Eye) Tan Tock Seng Hospital NHG Health, MOH

Dr Lee Kok Keng

Medical Director Medical Services Yishun Community Hospital NHG Health, MOH

A/Prof Tan Ker Kan

Head & Senior Consultant Department of Surgery National University Hospital National University Health System МОН

A/Prof Chai Ping

Head & Senior Consultant Department of Cardiology National University Hospital National University Health System MOH

Dr Chong Wee-Min, Justin

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Clinical A/Prof Joan Khoo Joo Ching

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Clinical Asst Prof Tay San San

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Associate Consultant **Tampines Polyclinic** SingHealth Polyclinics Singapore Health Services, MOH

The Long Service Medal (Military)

COL (NS)(DR) Chong Si Jack, PPA(G) **Singapore Armed Forces**

SLTC (NS)(DR) Teo Chang Peng, Colin, PP

Singapore Armed Forces

This list may not be exhaustive. If we have inadvertently omitted the name of any recipient, we sincerely apologise for the oversight. 🗢



UNLOCKING ENTREPRENEURIAL INSIGHTS:



HAIG's Doctorpreneur Event

Text by Joanne Ng, Deputy Manager, Membership Services

The SMA Healthcare Administrators Interest Group (HAIG) recently hosted a captivating event on entrepreneurship, bringing together three accomplished "doctorpreneurs" to share their startup journeys and experiences. Held on 2 June 2025 at Cafe Melba in Mediapolis, the event provided a unique opportunity for attendees to learn from the successes and challenges of these medical innovators.

Dr Jeremy Lim, founder of AMILI, Dr Sue-Anne Toh, co-founder of NOVI Health, and HAIG member Dr Dinesh Visva Gunasekaran, co-founder of AskDr and DoctorBell, took turns sharing their entrepreneurial stories and offered valuable insights into the world of healthcare innovation. They detailed the highs and lows of startup life from conceptualisation to

execution, highlighting the importance of perseverance, adaptability and innovative thinking.

The event was well attended by SMA Members and non-Members alike, all eager to learn from the expertise of these "doctorpreneurs". The panel discussion provided a platform for attendees to engage with the speakers, asking guestions and seeking advice on various aspects of entrepreneurship.

The event also highlighted the growing trend of "doctorpreneurs" in Singapore, who are leveraging their medical expertise to develop innovative solutions that improve patient care and outcomes. As the healthcare industry continues to evolve, the role of "doctorpreneurs" will become increasingly important in driving innovation and shaping the future of healthcare delivery. Furthermore, the event's success underscores the importance of knowledge sharing and collaboration in the healthcare industry, and we look forward to future events

that continue to inspire and educate. If you are interested in learning more about HAIG's upcoming events, please stay tuned for future announcements. For those interested in joining the HAIG Special Interest Group, please write to membership@sma.org.sg. •





- 1. Uniting for a cause: HAIG brings together passionate healthcare administrators
- 2. Transforming healthcare through entrepreneurship: speakers in action





15 November 2025, Saturday 1.30 pm to 4 pm

CME points: 2 (Subject to SMC's approval)

Fee: Complimentary for SMA Members \$218 for Non-Members



GP Education Series

PANCREAS CARCINOMA: **MULTIDISCIPLINARY COLLABORATION**

Join us to learn from a multidisciplinary team and stay updated on best practices in pancreatic cancer care.

Pancreatic cancer is one of the toughest cancers to detect and treat early. This half-day webinar brings together experts from different specialties to share practical insights on diagnosing, managing and caring for patients with pancreatic cancer.

Designed for doctors and healthcare professionals involved in cancer care, the session will feature concise, focused presentations to support better coordination and patient outcomes.

Time	Topic	Speaker
1.30 pm	Introduction and Opening Remarks	A/Prof Vishalkumar G Shelat
		Senior Consultant, Department of General Surgery, Tan Tock Seng Hospital
1.40 pm	Obstructive Jaundice: Diagnostic Algorithm for Clinicians	Dr Ng Yunn Cheng
		Consultant, Department of Gastroenterology, Tan Tock Seng Hospital
2 pm	Role of Radiology in Diagnosis and Management of	Dr Lawrence Quek
	Pancreas Cancer	Senior Consultant, Department of Diagnostic Radiology, Tan Tock Seng Hospital
2.20 pm	Role of the Surgeon in Managing Pancreas Cancer	Dr Nita Thiruchelvam
		Consultant, Department of General Surgery, Changi General Hospital
2.40 pm	Role of Endoscopy in Management of Pancreas Cancer	Dr Toh Bin Chet
		Senior Consultant, Nexus Surgical Associates, Mt Elizabeth Novena Hospital
3 pm	Role of the Medical Oncologist in Management of	Dr Pritish Gehlot
	Pancreas Cancer	Consultant, Medical Oncologist, Tan Tock Seng Hospital
3.20 pm	Sleep and Cancer – A Lesser-Known Relationship	Dr Garvi J Pandya
		Consultant, Advanced Internal Medicine and Sleep Specialist, HMI Medical Centre (Farrer Park)
3.40 pm	Managing Tubes and Drains and Nutrition in	Ms Ong Yujing
	Pancreas Cancer Patients	Advanced Practice Nurse, Khoo Teck Puat Hospital
4 pm	Closing Remarks	A/Prof Vishalkumar G Shelat
		Senior Consultant, Department of General Surgery, Tan Tock Seng Hospital

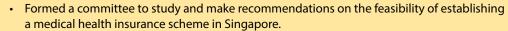
SMA's Journey with Medicine and Doctors

As we celebrate the nation's 60th anniversary, SMA takes this opportunity to look back at its own journey in shaping and impacting Singapore's medical landscape. We recap below SMA's key contributions in accordance with three of its objectives: (1) to support a higher standard of medical ethics and conduct; (2) to voice its opinion and to acquaint the Government and other relevant bodies with the policies and attitudes of the profession; and (3) to foster and preserve the unity and aim of purpose of the medical profession as a whole.

Legend

- 🌑 Blue: Works towards enabling higher standard of ethics 👚 🕟 Green: Advocacy work for the profession 💨 Yellow: Supporting doctors in their practice

- Released the first edition of the SMA Code of Ethical Conduct.
- Formed the SMA Ethics Committee.



Medical Defence: Advised Members to insure themselves against possible litigations.

- Conducted internal discussion on whether SMA should get Singapore Medical Council (SMC) to accept the SMA Ethical Code as the national medical ethical code.
- Revised and distributed the SMA Ethical Code to all Members. A copy was forwarded to SMC seeking their agreement to have the Code used not only by SMA Members but by doctors in Singapore in general.
- Wrote to the Government highlighting concerns with the terms of the bond it was imposing on medical students in their second to fifth year of studies.
- Participated in the formulation of regulations tabled with the Private Hospitals and Medical Clinics Act (1980).
- Maintained a National Medical Directory to ensure updated information of qualified doctors.
- Proposal to set up SMA Foundation Fund to support doctors, nurses, medical students or paramedical personnel and their families who, either through death or disease, may suffer severe financial hardship; to provide bursaries and scholarships; and to stimulate research by offering research grants and prizes.

- SMA's suggestions on issues such as confidentiality between doctors and patients, the need to give reasons for evocation or suspension of practitioners' licences, and the right of appeal to SMC were included in the Private Hospitals and Medical Clinics Bill passed.
- Appointed a committee to look into factors contributing to costs of medical practice to serve as a foundation in drawing up a Guideline on Fees (GOF).
- Published the first edition of the GOF in a bid to manage rising doctors' fees in 1987.
- Set up computer club to promote computer literacy among doctors.
- Launched the SMA Bulletin Board System with a bulletin, message, conference and file system to encourage computer use among doctors; to allow for information sharing; and to link up and get the profession closer together.
- Organised the first National Workshop on AIDS on 4 October 1987.



- Solicited and collated feedback from Members regarding the newly released SMC Ethical Code.
- Formed the Medical Officers' Committee (precursor to the SMA Doctors-in-Training Committee) to better understand and represent junior doctors.
- Conducted the survey and published the report on the concerns of young doctors in Singapore, primarily regarding salary, working hours and career opportunities.
- The advocacy by the Medical Officers' Committee culminated in the Ministry of Health's (MOH) adjustment of salary, including night call allowance.
- Published the first edition of SMA Fitness to Drive guidelines, to help doctors in assessing a driver's fitness to drive a vehicle.
- Published the first edition of the SMA House Officer (HO) Handbook.
- Medical Defence Union moved out of Singapore and their portfolio was absorbed by Medical Protection Society (MPS). SMA stepped up and brought in United Medical Protection (UMP) to ensure the availability of more than one medical defence organisation.

Formed the SMA Centre for Medical Ethics and Professionalism to uphold medical professionalism and ethics amid rising costs of healthcare, patient expectations and medico-legal risks.

- Spoke up for the removal of the one-third quota imposed at that time on the intake of female medical students.
- Explored and negotiated means to exclude the GOF from Section 34 of the Competition Act. This was unfortunately unsuccessful and the GOF was ultimately withdrawn in April 2007.



- UMP failed, leaving one-third of Singapore doctors without cover. SMA negotiated with both MPS and NTUC Income, resulting in nose coverage by MPS at no additional cost and lower-priced claims-made policies by NTUC Income for affected doctors.
- At the onset of the SARS outbreak, there was no national stockpile of personal protective equipment or N95 masks, and none were available for sale. SMA successfully sourced critically needed N95 masks for private sector doctors.
- Purchased/obtained 3M masks for sale to Members to tide them over the interim period before new supplies arrive amid the SARS outbreak.
- Organised medical supplies fairs and mask fit testing sessions for doctors and dentists.
- Set up the Medical Students' Assistance Fund (MSAF), following a survey of medical students' financial backgrounds.





- Submitted a position paper to provide feedback on the SMC Ethical Code and Ethical Guidelines for its update.
- Set up the SMA Charity Fund to better raise funds and support needy medical students. It absorbed and took over the functions of MSAF.
- Issued a joint advisory with Academy of Medicine, Singapore (AMS) and College of Family Physicians Singapore (CFPS) on fees paid to managed care and third-party administrators about a percentage charge for administrative fees which could constitute fee-splitting.
- Advocated for fee transparency, contributing to MOH fee benchmarks.
- Launched the mandatory medical ethics continuing medical education (CME) programme, offering 17 programmes in the first year for doctors to accumulate the necessary CME points.

- Conducted a survey on Integrated Shield Plans (IPs), with the results published in April 2021 issue of SMA News.
- Conducted a nationwide survey on overnight duty systems (results published in October 2020 issue of Singapore Medical Journal).
- Provided input on the forming of the Multilateral Healthcare Insurance Committee (MHIC), whose work has resulted in more equitable treatment of doctors and patients. Before the formation of the MHIC, individual doctors were powerless when they felt unfairly treated by insurance companies.
- Conducted a survey ranking of IP insurers as per one of the initiatives proposed in SMA's position statement on troubled IPs (results published in June 2023 issue of SMA News).
- Jointly wrote a letter with AMS to Monetary Authority of Singapore on the regulation of IPs.

- SMA arranged for release of MOH stockpile of N95 masks and organised sale of N95 masks to doctors.
- Published special SMA e-News to provide the latest COVID-19 updates and information.
- Jointly organised with CFPS and Singapore Dental Association (SDA) a complimentary "Bring Your Own Bottle" hand sanitiser distribution exercise for registered medical/ dental clinics and CFPS/SDA/SMA members.
- Initiated the #SGartforHCW campaign to rally the art community to generate artworks to show appreciation and support for healthcare workers during the fight against COVID-19.
- Launched the DIT 101 Digital Pocketbook (replacing HO Handbook) to support HOs. ◆



Text by Jessiree Jie Ning Kwok, Helen Cai and Jonathan Tang

Jessiree is a Year 1 medical student at Lee Kong Chian Medical School. She is passionate about Korean dramas.

Helen is a Year 5 medical student at the University of Cambridge. In her free time, she enjoys travelling and unwinding with Korean dramas her favourite guilty pleasures.

Jonathan is an emergency medicine specialist and clinical toxicologist practicing in National University Hospital and Alexandra Hospital. Beyond xenobiotics and heavy metals, he is fascinated by venomous animals and poisonous mushrooms.







Historical Korean dramas (K-dramas for short) are exciting, enticing and captivating. As viewers, our attention are drawn to moments of tension and suspense, usually centred around something that is sinister and imminent.

[Spoiler alert] Empress Ki, episode 51 (available on Netflix): Eunuch Golta tests a tray of food with a silver needle. All clear. He proceeds to serve the dish to Emperor Ta-Hwan who gobbles it down, smiling. Moments later, the emperor violently coughs up bright red blood and collapses to the ground.

Assassination scenes are a staple to almost all period dramas. It is not housewives alone who succumb to the addictive nature of dopamine; doctors do too. We might attribute the appeal of K-dramas to the actors' attractive looks, romanticism and the bygone lifestyle, but it really is dopamine.

So, does testing for poison with a silver needle really work?

Origin of poison testing

During the Joseon dynasty in Korea, arsenic-sulphur compounds were used as a major ingredient of sayak.1 Sayak was the poison used mainly as an execution method reserved for the royals and elites during that period.2,3 It was also an ideal secret weapon for homicidal purposes, given its colourless, odourless and tasteless properties.4 Arsenic can be administered in a series of small doses, with symptoms going unnoticed for a long period of time.5 It is speculated that silver chopsticks were invented in Korea around 523 AD, with the intention to detect arsenic poison during meals,6 after royalty in the ancient Korean kingdom became aware that silver reacts with sulphides and sulphurbased poisons, tarnishing it by forming an insoluble black deposit.

This method of poison testing is flawed, however, as it would take a significant amount of time for the arsenic sulphide in food to discolour silver. Nonsulphur-containing arsenic compounds like arsenic trioxide would also not react and thus escape detection. Furthermore, with the invention of more accurate laboratory detection tests for the poison, the need to test food with silver needles or chopsticks is now completely obsolete.

Is arsenic poisoning still relevant today?

Arsenic is a metalloid that exists in multiple forms: elemental, gaseous (arsine), organic (arsenobetaine) and inorganic (trivalent or pentavalent arsenic). Contaminated soil, water and food are the primary sources of arsenic exposure in the general population. The World Health Organization recommends a maximum concentration of 10 parts per billion or 10 mcg/L of arsenic in drinking water. According to the Food and Agriculture Organization of the United Nations, climate change will cause more arsenic and other heavy metals from mining sites to circulate in our environment, threatening our food security.7 Locally, the Singapore Food Agency (SFA) has in place regulatory requirements that involve testing of food products to ensure that maximum limits of arsenic contamination are not exceeded. For instance, the limit of inorganic arsenic is set at 0.2 parts per million for polished rice.8 SFA reports that our seafood and rice products are not excluded from these tests as heavy metals are naturally occurring contaminants, though it is impossible to eliminate them entirely from our food supply.

In industry, arsenic is used to manufacture paints, fungicides and pesticides, and it is a by-product of smelting and semiconductor manufacturing. It has therapeutic uses as well. Traditionally, arsenic was used widely in the 19th century in the form of Fowler's solution to treat a range of conditions including leukaemia, syphilis, psoriasis and eczema. Arsenic trioxide is still used today to treat acute promyelocytic leukaemia, leveraging its mechanism as an inducer of apoptosis.

Though arsenic continues to be an ingredient in many non-Western traditional medicinal and homeopathic products, it is more likely an unintended contaminant. There have been health alerts published by the Health Sciences Authority in recent years to warn the public against purchasing and using unlicensed health and cosmetic products found to contain high levels of arsenic (eg, Euzema Confidence Revival Cream and TCM Recipe

Licozen Ointment). Both were advertised on online platforms, claiming to be steroid-free, 100% safe and natural treatments for eczema.

The real symptoms of arsenic poisoning

Arsenic poisoning may be acute or chronic. Arsenic toxicity occurs from inhalation, dermal exposure and primarily by ingestion. Organic arsenic (arsenobetaine) found in seafood and fish is non-toxic whereas inorganic arsenic is toxic. Trivalent arsenic or arsenite (As[III]) is 60 times more toxic than pentavalent arsenic or arsenate (As[V]). Clinical manifestations are a result of inactivation of enzymes required in cellular energy pathways and DNA replication.

Acute arsenic poisoning occurs from accidental ingestion or deliberate self-harm. The most visible and earliest manifestation of toxicity are gastrointestinal symptoms of nausea, vomiting, abdominal pain and diarrhoea.⁵ Vomiting of blood or losing consciousness is certainly not an instant response, and would take minimally 30 minutes to several hours for the effects to kick in at a lethal level.9 Profuse diarrhoea is characteristic and the term "bloody rice water" diarrhoea has been used. Shock and cardiovascular collapse may result from massive intravascular volume depletion and blood loss. Other complications include seizures, acute encephalopathy, cardiomyopathy, prolonged QT and hepatitis.

Chronic arsenic toxicity affects virtually all body systems, with the most serious consequence being an increase in malignancies, particularly bladder and skin cancers. Clinical features vary significantly as it is dependent on the dose, form, route and duration of arsenic exposure. Non-specific abdominal pain and diarrhoea may occur. The skin is highly susceptible to the toxic effects of arsenic. Hyperpigmentation in the face, trunk or extremities occurs first, accompanied by palmar and solar keratosis. Arsenic deposits in keratinrich tissue (ie, hair and nails) can be visible as prominent transverse white lines in the nails, also called Mees' lines. Peripheral neuropathy can develop,

together with encephalopathy and cognitive impairment. Cardiovascular complications include cardiomyopathy and blackfoot disease, which is an obliterative peripheral vascular disease of the lower limbs that was reported in Taiwan.10

A review of 17 cases of chronic arsenic toxicity in Singapore found that 14 patients (or 82% of cases) with cutaneous lesions were secondary to arsenic from Chinese proprietary medicines while the remaining three consumed well water.11 In another report of three patients presenting with ulcerated skin lesions and with advanced neoplastic disease, the possibility of chronic arsenic poisoning went undetected until a history of traditional Chinese medicine use was traced.12

Arsenic concentrations should be measured if a potential source of exposure is identified with clinical features suggestive of either acute or chronic poisoning. The diagnosis of arsenic poisoning is established with an elevated urinary arsenic concentration. Blood concentrations are of limited utility as arsenic is rapidly distributed into tissues, while hair and nail samples are unreliable due to the risk of external contamination. However, as urinary arsenic tests measure both inorganic and organic arsenic forms, seafood and seaweed must be omitted from the diet for at least five days before the test is performed.13

Management of patients with suspected arsenic toxicity should be discussed with a clinical toxicologist. Acutely poisoned patients would require haemodynamic stabilisation and electrolyte replacement, likely in an intensive care setting. Removing the source of exposure is crucial. Chelating agents such as dimercaptosuccinic acid (eg, Succimer) and dimercaptopropanesulphonic acid (eg, dimercaptopropane sulfonate) can enhance urinary arsenic excretion and would have a role in the management of acute toxicity. Its efficacy in chronic poisoning is not well established.

K-dramas can create a dramatic illusion of what arsenic poisoning looks like. In reality, symptoms are typically non-specific in subacute and chronic presentations. Obtaining the patient's occupational history and use of traditional and herbal medications or supplements as potential sources of arsenic exposure is crucial for early detection. Hyperpigmentation and keratotic papules are sufficient indicators of dermatological manifestations of chronic toxicity. More awareness is needed for physicians to have a high index of suspicion for early diagnosis and treatment to prevent downstream complications.

And for those wondering what happened in Empress Ki, the rim of the cup was poisoned, escaping the silver needle's poison detection. ◆

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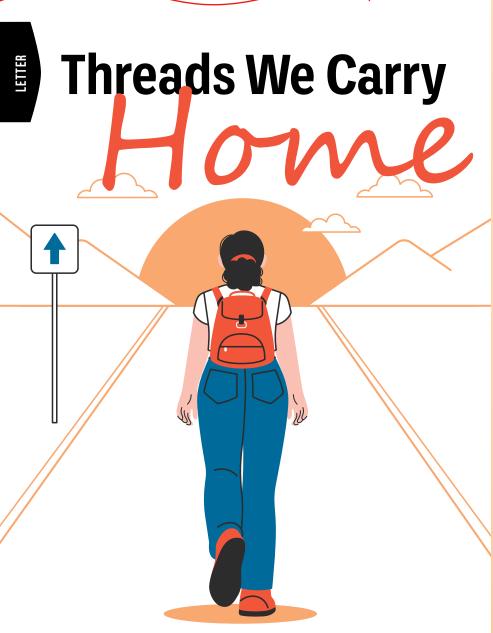
SMJ Editorial Fellowship 2026





The Singapore Medical Journal Editorial Fellowship offers early clinician researchers hands-on experience in publishing and editorial work. Fellows learn about study design, data validity, novelty and impact, while reviewing manuscripts under expert mentorship. They also gain the opportunity to co-author an editorial or commentary, building skills and exposure early in their academic journey.





Text by Christic Moral

The journey of becoming a healthcare professional has always been a tumultuous and arduous one. Like how forcing rhubarb to grow in darkness yields larger, sweeter stalks, medical and dental school demand growth in the face of hardship. The summer holidays offer solace while we are still students and serve as a time to rest, reflect and reconnect. In these months, the Singapore Medical Society of the United Kingdom (SMSUK) will begin its outreach to prospective students, as well as continue to engage its members and alumni with workshops and other activities. In this month's letter, Bia shares the lessons that she has learnt through the first year of medical school.

Christic is a Year 2 medical student at King's College London and is the Editor of the 31st SMSUK executive committee.



Text by Rabiatul Idham

It feels surreal that the academic year has come to a close. I still remember when I landed in London for the first time, eager to begin learning yet nervous about settling in and coping with medical school overseas. Truthfully, I need not have worried so much. Looking back, I have adjusted well and I am happy with how the year has unfolded. There are three stories and lessons that I hold close to my heart.

The first lesson is about kindness. Within a month of starting university, I lost a close family member. It was devastating. I confided only in my tutor and a close friend - I did not want to overwhelm my new friends with grief and I skipped a day of lectures to grieve. With over 400 students in the cohort, I did not think anyone would even notice my absence. The next morning, however, I woke up to a message from that friend, checking in because she had noticed that I was not around. When we next met, she handed me a drink, a handwritten note and a hug. It was a small gesture, but one so full of love, kindness and compassion.

Throughout the year, I experienced many small acts of kindness that meant the world to me. Strangers helped me carry my luggage when the escalators were not working. My friends walked me home after a late-night study session at the library. My mentors offered words of encouragement when I needed them the most. These moments taught me that kindness does not have to be loud or grand; it can be quiet and thoughtful, yet still make people feel seen. This is the kindness I hope to exemplify.

The second lesson is about finding purpose and clarity. As examinations approached, it was easy to fall into the trap of becoming an "Anki warrior", mindlessly speeding through thousands of flash cards. Amid the monotony of revision, I found I learnt best when I sought meaning. For example, learning about the urea cycle and gene editing became so much more meaningful when I read about KJ Muldoon, the first patient to receive a personalised CRISPR geneediting treatment for CPS1 deficiency.

Similarly, I read about a patient who had been under psychiatric follow-up for a period of time before his GP diagnosed him with Wilson's disease. As the GP described the patient's symptoms, examination findings, investigations and treatment plan, I was surprised that I could somewhat follow along, because we had learnt about Wilson's disease in a lecture. It was fulfilling to see the clinical relevance of what I was learning in school. Finally, while shadowing a psychiatrist, I met a patient with psychosis who was ready for discharge from the inpatient unit. The consultant told me that when the patient first arrived, he was severely unwell, just like others still in the ward. The patient's transformation was remarkable. These experiences solidified my resolve to always learn with my future patients in mind. What better thing to do with my time and energy than to work hard?

With this clarity, everything became easier. Studying was time well spent. I eagerly seized every opportunity to learn. I had previously held back from

asking questions or asking for help due to my fear of judgement and rejection. However, it was easy to let go of those fears when I approached my learning with humility, striving to put my future patients first. Once I found my purpose and clarity, everything fell into place.

My final lesson is about time. I can barely believe that my first year of medical school is over and that I am now a second-year medical student. My perspective on time was profoundly shifted after reading "The Tail End" by Tim Urban.¹ The piece visually presented the finite nature of life's significant moments. It struck me that by studying overseas, I had made a trade-off: five fewer Hari Raya celebrations and five fewer birthdays spent in-person with my loved ones. This is time I will never get back. This realisation changed how I spent my time. I made a list of my priorities, wanting to be intentional. This summer, that means disconnecting from social media and my phone, so I can be fully present with my loved ones.

I am grateful for this year's experiences and the lessons they have brought. I hope they resonate with you as well. •

Further reading

1. Urban T. The Tail End. In: Wait But Why. Available at: https://bit.ly/3lbnTn9.

> Rabiatul is a Year 2 medical student at King's College London.





Research Conference 2025, organised by King's Clinical & Academic Research Society



Dr Teo has always championed lifestyle modifications to improve health outcomes. However, access to information on available community resources used to be less structured.

"Before Healthier SG, these community programmes existed but we didn't have good visibility," he notes.

This has since changed. Digital tools like EventsGoWhere and the Healthy 365 app now make it easier for Dr Teo to have conversations with patients on lifestyle changes and recommend them to participate in nearby activities.

Timing the Conversation

at a time.

Over his 10 years of practicing at Healthway Medical, Dr Teo has found a formula to nudge patients towards a healthier lifestyle more effectively.

"You can't just say 'be more active' and expect it to stick," he explains. "It is about timing and personalising the recommendation."

Dr Teo typically introduces community-based lifestyle programmes to his patients once rapport has been established.

"Usually by the second or third visit, they have gained some momentum. That gives me the opportunity to say, 'Would you like to try something lifestyle-related?""

Matching the Right Programme to the Right Patient

Dr Teo's recommendations are always tailored to each patient's capacity and interests. Active patients may try intensive exercises such as jogging, while older

adults may benefit from less-intense activities like balloon sculpting, karaoke or the "Move It, Feel Strong" programme by the Health Promotion Board (HPB) which incorporates strength, balance and flexibility exercises into workout routines like Zumba Gold. Apps like Healthy 365, which incentivise users to engage in activities such as step counting, moderate to vigorous exercise, sleep tracking, and meal logging, can effectively motivate participation.

DR TEO CHENG RONG

"I've had patients telling me they can't make evening appointments because they have Zumba classes," he laughs. "That's a good problem to have."

In some cases, matching patients to the right programme also brings relief to caregivers. Dr Teo recalls a particularly moving case involving a dementia patient and his daughter, who was struggling to manage his care. Withdrawn and showing signs of behavioural decline, the elderly patient had little to anchor his days. However, a simple recommendation to visit a nearby Active Ageing Centre (AAC) spurred a transformation.

"He started looking forward to karaoke sessions, and daughter said it was the first time in years he felt alive again."

Seniors can stay active by participating in HPB programmes available in their neighbourhoods.



Personalising with Digital Tools

To streamline referrals, Dr Teo relies on EventsGoWhere to search for suitable programmes by location, activity type and intensity. For most patients, he recommends using Healthy 365 to find and sign up for nearby programmes on their own. For those who need more help, he provides printed options or directly reaches out to programme coordinators.

Personalisation also plays a key role. Dr Teo would filter and shortlist activities based on the patient's postal code, routine, lifestyle and interests.

"I did that recently for a patient," he recalls. "He and his wife were glad to have something to look forward to."

Strengthening the GP-Patient Relationship

Dr Teo believes that incorporating lifestyle interventions into care plans does more than improve physical health; it can strengthen the doctor-patient connection.

"When patients see that we care about more than just lab results, it builds confidence. We are showing them we care about their lives, not just their charts."

He often shares his own participation in HPB's personalised digital health programmes with patients, to create a shared experience.

"It becomes less about prescribing and more about partnering. When they feel better physically and emotionally, they become more engaged. That's the long-term value."

Working through the Challenges

Still, barriers remain. Limited consultation time, inconsistent follow-up and patient hesitation can all pose challenges.

"Sometimes a patient is open to change but you miss the window. Or they're hesitant because it's unfamiliar," Dr Teo explains. "That's why continuity in primary care matters so much. We build trust over time."

For GPs who are unsure where to begin, Dr Teo offers a simple message: start small.

"We are all busy. No one expects you to overhaul your practice overnight. But even just visiting a nearby AAC once during your off hours can change your perspective."

He encourages his peers to build relationships with community partners, explore online tools and resources such as the Primary Care Pages, or speak with their AIC account managers for guidance.

As Singapore moves towards a more preventive and person-centric healthcare model, the GP's role as connectors to community, activity and hope becomes more essential than ever.

"I think it starts with all of us – doctors, dietitians and physiotherapists – bringing up the topic," Dr Teo reflects. "But we shouldn't just tell patients what to do. We need to show them how and where."

"Sometimes, what matters most isn't a lab result. It is being able to keep playing guitar or going for a walk. Those things mean a lot to people, and it is our job to see them as whole persons."

How to use the HealthierSGEventsGoWhere Portal





EventsGoWhere

Getting Active with Patients

- Start the conversation. Lifestyle does not need to be a separate topic; introduce it naturally as part of ongoing care.
- Leverage on available tools. Use EventsGoWhere or Healthy 365 to help patients access programmes by location, intensity and interest.
- Encourage tech-savvy patients to take charge of their health journey by exploring lifestyle apps such as Healthy 365 and get rewarded for participating in challenges and programmes.
- Connect with the AAC or community services near your clinic to build networks that support your patients' longterm well-being.



AAC Near Me



Text and photos by Dr Lim Ing Haan, Editorial Board Member

April marks the season when Washington, DC, US emerges from winter's quiet grip, coming to life in the energy of spring – blossoms in full bloom, a gentle buzz in the air and visitors relaxing on the expansive lawns of the National Mall.

For me, a visit to Washington, DC is a cherished tradition. Since the days of my training in Duke University, I have returned to this city many times to participate in the annual Transcatheter Cardiovascular Therapeutics® (TCT®) interventional cardiovascular conference. This year, I was invited to deliver some lectures at the Society of Cardiovascular Angiography and Interventions (SCAI) Scientific Sessions in late April 2025.

I remember the surge of emotion that rose within me the moment this opportunity arose - a mix of excitement, gratitude and anticipation. The chance to return to a city filled with cherished memories, to reconnect with old friends through shared knowledge, and to visit my cousin stirred a deep sense of warmth and nostalgia.

My last trip to Washington, DC was in 2016, a year charged with political tension as Hillary Clinton and Donald Trump vied for the presidency. Just two years earlier, Hillary had stood at the podium of TCT® 2014, delivering the keynote address at the four-day cardiology meeting which had 1,200 faculty, 15,000 attendees and 161 concurrent sessions.

A meaningful return

I arrived in the early evening after sunset, the city cloaked in a quiet, reflective dusk. Donald Trump had been freshly elected. Drawn by an impulse, I made my way to the White House and captured a photo that still lingers in my memory. The Equestrian Statue of General Andrew Jackson - 7th President of the United States – on horseback framed perfectly against the glowing facade of the White House, a moment of history frozen in the soft hush of evening.

As I made my way east around the White House, the rich scent of grilled steak drifted through the air. Drawn by the aroma, I found myself at the doors of Old Ebbitt Grill. I was lucky to secure a seat at such short notice at this historic American restaurant. With an hour to spare till seating, I continued my walk south, heading toward the Washington Monument, its towering silhouette guiding me through the evening. From there, I managed a glimpse of the Lincoln Memorial which was captured using the digital zoom of my handphone. The evening ended with a perfectly charred Linz Heritage Angus Ribeye, half a dozen oysters and a vanilla bean pavlova desert. With that, I returned to my hotel to settle in for the night.

The following two days were filled with conference engagements. I delivered two lectures, chaired one session and participated as a panelist in another. In between, I had the pleasure of reconnecting with a few dear friends from both the US and around the globe.

Over the years, sunrise runs have become a cherished tradition among interventional cardiologists during





overseas conferences. This year was no exception. Joined by colleagues from the US, Cambodia and Hong Kong, we gathered at dawn on the steps of the Lincoln Memorial to welcome the sunrise. From there, we set off for a run through the tree-lined paths of the National Mall, taking in the elegant architecture of the Smithsonian museums. The streets were almost entirely empty – no traffic, no crowds – just the quiet beauty of the city waking up.

Revisiting familiar sights

The Library of Congress is always my first destination when I visit Washington, DC. It holds Thomas Jefferson's vast personal library, which replaced the original 3,000-volume congressional collection lost during the British invasion of 1812. The impressive architecture and the vast collection spanning science, engineering, politics and art never cease to astonish me.

The Smithsonian museums are among my favourite haunts too. On this trip, I visited the National Museum of Natural History and stood beneath the iconic 11-ton African Bush elephant under the Rotunda, and walked under the leaping tiger in the towering Hall of Mammals. I also retraced my steps through the National Air Space Museum beneath the historic aircraft that touched the edge of space and strolled through the National Gallery of Art to admire the brushstrokes of the American masters.

On the final day, I visited my uncle, who had gone to the US to study at Princeton in the late 1960s and eventually made it his home. He now lives with his family in Virginia, along the banks of the Potomac River with wild horses in his backyard. Our families have remained closely connected across four generations. My cousin even sent his children to Singapore on a student exchange, continuing the bond that has linked our families over the years.

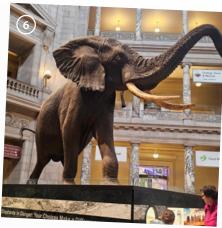
After four fulfilling days in Washington, DC, I departed with a full heart and the hope of returning soon – next time, with my family by my side. ◆

Legend

- 1. The equestrian statue of Major General Andrew Jackson silhouetted against the White House
- 2. Delivering a lecture
- 3. With President Elect of SCAI 2026 Dr Dawn Abbott, an interventional cardiologist
- 4. Dr Lim with good friends Dr Kwan Lee from USA and Dr Lam Ho from Hong Kong
- 5. Washington monument at the break of dawn
- 6. The icon of National Museum of Natural History – 11-ton African Bush Elephant
- 7. Inside view of the Library of Congress, Thomas Jefferson Building, Washington DC

Dr Lim is the first female interventional cardiologist in Singapore. She is an early adopter of new technology and is a key opinion leader in international cardiology conferences. She shares a clinic with her twin, Dr Lim Ing Ruen, an ENT surgeon at Mount Elizabeth Hospital. Both believe in the power of food, travel, laughter and loyalty in forming strong family bonding.









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