

Out of the Ordinary

By Dr Toh Han Chong, Editor

“Out of the ordinary” sums up Brigadier-General (BG) (Dr) Benjamin Seet’s life experiences perfectly. The ex-Chief of Medical Corps at the Singapore Armed Forces (SAF) shares how he forwent a career in Ophthalmology for the military. Currently the Executive Director of the Biomedical Research Council (BMRC) at the Agency for Science, Technology and Research (A*STAR), BG (Dr) Seet recalls his engagements with the United Nations (UN) peacekeeping department over the course of 14 years, which took him to post-conflict countries that most Singaporeans can only read about in the news, and he is still engaged in work for the UN today. This out of ordinariness has even extended to his hobby as well.


A medical journey

Dr Toh Han Chong – THC: Were you always inclined, initially, towards Ophthalmology and from the public health point of view, as a junior doctor?

BG (Dr) Benjamin Seet – BS: The choice of Ophthalmology came a little later. It was actually a practical choice after I decided to sign on with the SAF. I had an inclination towards the surgical fields, and initially considered General Surgery or Colorectal Surgery, but after deciding to join the SAF, I chose Ophthalmology. This was a smaller field of surgery, which would make it easier to stay current as a full-time SAF career officer.

THC: For a young man who has chosen Medicine as a field and in this country, it’s a prestigious field to work in. Many people believe they would practice Medicine throughout their entire career until they retire. At what inflection point did you feel your calling was outside the clinical area?

BS: I don’t think there was an inflection point, the decision took place progressively. After obtaining my MMed in 1994, I returned to the SAF as a young Major. I guess the challenge was trying to balance a clinical



BG (Dr) Seet leading the UN Technical Advisory Group to Sudan in 2011

career with a military one. Over time, it became difficult to maintain a satisfying clinical career. I enjoyed clinical work. I liked dealing with patients. I liked surgery, and I thought I was good at it. However, it got to a point where it was quite difficult to do two things well. I'm a little bit of a perfectionist, so it was difficult to compromise on either my military career, or the clinical one. In the end, one had to give.

THC: Is there a part of you that still misses the level of connectivity with patient care?

BS: I left clinical Medicine 18 years ago. I would say that I'm the sort of person that once I've made up my mind, I don't look back. I've not done so since 1995. In that sense, no, there are no regrets. If I were to do it again, I would have taken the same path. The process of specialty training taught me to practice Medicine in a more focused manner – this was important training. The path I took exposed me to two aspects of Medicine that showed me that there was more to the practice of Medicine than the clinic or operating theatre. This was when Arthur Lim was building up the Singapore National Eye Centre (SNEC) and Singapore Eye Research Institute, and I witnessed how he was doing it firsthand. It taught me about medical leadership, about administration, as well as about the role of research. I respect Arthur Lim for what he has done for Ophthalmology in Singapore, even though he was in the private sector at that point in time. Secondly, it exposed me to International Health. SNEC had many international programmes with China and India, and there were many opportunities for Singaporean doctors to contribute in a bigger way.

I see my training in Ophthalmology as a formative part of my career that not only exposed me to work in that specialty, but introduced me to medical research as well as International Health. I left Ophthalmology eventually for International Health. That's another story in itself.

THC: When you went to do your Masters in Public Health (MPH) at Johns Hopkins in Baltimore, what would you say would be some eye-opening experiences and memories during that time?

BS: I would say the Hopkins MPH programme completed my medical education and I've told many people that. Studying Medicine in Singapore, at that point in time, was a didactic process where we were taught the mechanisms of diseases and how to treat them. But bringing in the wider societal context was something that was missing in my education as a doctor.

The economics of healthcare, sociology, politics and health are very fundamental to public health decision

making. Understanding these aspects allowed me to see things through a macro view. I was particularly intrigued by the socioeconomic inequalities in health, which were clearly evident in America. There were social groups in the community that were badly disadvantaged by their poor access to healthcare. Baltimore was a good example. Johns Hopkins, if you've visited it, is in a really rough part of town. We were told that the health indicators in the immediate vicinity of Hopkins, at that point in time, were worse than in some developing countries, despite Hopkins being one of the best hospitals and public health schools internationally. Some public health indicators, like life expectancy of young males, were comparatively lower in view of drug abuse and urban violence.

Improving the SAF

THC: What were some of the achievements that the SAF Medical Corps made under your leadership?

BS: That is a tough one – I don't know where to start. My key accountability as the Chief of Medical Corps was for the medical screening and health of all the national servicemen (NSmen). In a sense, I was accountable to all the mothers, to all the wives, as well as to the kids, for the health and medical fitness of the NSmen. That was a very huge accountability, because every time something went wrong, the buck stopped at me. One thing I pushed for was to make the system more evidence-based, to put more rigour into screening and to work with hospitals. For example, we linked up with the National Heart Centre for cardiac screening, and put in place evidence-based protocols and clinical practice guidelines. We were importing all the best practices from the hospitals and public health systems into the SAF.

The next area was prehospital response – the emergency medical treatment for any medical contingency. We approached this from the basics up, starting with the training of the paramedics. One thing I pushed for was accreditation of their training, which involved working with Nanyang Polytechnic and our partners at the Justice Institute of British Columbia (JIBC) to put together a structured academic programme for training paramedics. For the regulars, this eventually led to diploma and advanced diploma courses, which counted for credits towards a degree programme at JIBC. In the training of paramedics, it was important for Singapore to catch up with countries like Canada and Australia – we were behind, and formalising the training into an academic programme was an important step.

The third area would be modernising the army medical system, bringing in new technology and platforms to enhance the quality of care whenever we have to deploy. This also allowed us to support SAF training with medical capabilities comparable to the hospital emergency room.

Secondment to the UN

THC: What was your time with the UN like, and what were the experiences then that have stuck?

BS: I have actually been involved in UN-related work for the past 14 years in different capacities. This started in 1998, when I spent one year in New York as a staff officer in the UN Department of Peacekeeping Operations. From 2004 to 2006, I served as the department's Chief Medical Officer, where I headed the unit that oversaw medical support for UN peacekeeping, which entailed looking after 20 hospitals and more than 200 clinics in different parts of the world. The challenge was that there was very little health infrastructure. Our job was to set up the entire health system for the UN peacekeepers and international staff, about 100,000 people in 18 post-conflict countries. We set up the hospitals, the clinics, put in place land and air evacuation systems, and ensured medical supplies. I reported to the UN and not to Singapore. At that time, Kofi Annan was the UN Secretary-General.

THC: How did that all come about? After all, this was an enterprise outside Singapore.

BS: It was something I had always wanted to do. I left Ophthalmology to go into International Health. My degree from Hopkins was a unique one. I have an MPH in International Health, as well as a Graduate Certificate in Humanitarian Assistance, which was quite esoteric from a Singapore perspective. I published papers related to the UN and taught courses related to the UN. In a sense, I was preparing myself to work for the UN, and when the opportunity arose, when I found out about this job, I applied for it and managed to convince the SAF to second me to the UN.

THC: Did you wear the UN uniform?

BS: No, I wore a civilian suit and tie.

THC: Which countries have left the deepest impression in you, in terms of the starkness of the needs and gaps that have to be filled?

BS: I guess every country has left its impressions. I've seen many places – Lebanon, Congo, Sudan, different parts of Africa. But I spent the most time in Timor Leste, which is closer to home. That was actually a deployment with an SAF contingent. I saw a lot of poverty, destroyed infrastructure, and a country trying to pick itself up again. That would have been about ten years back – things would be better by now.

I actually still do some work for the UN, even though I have left the SAF. In February last year, I took leave to go

to the demilitarised zone in Northern Cyprus. I wouldn't call it a holiday.

THC: So you're like a card-carrying member of the UN alumni.

BS: I am a member of a technical advisory group that advises the UN on its medical support system. Last year, this brought me to Uganda and Darfur. Darfur is definitely the harshest place I've seen. It literally looks like Mars with little villages scattered in the desert. It has a very amazing landscape.

THC: Is there any sense of optimism there?

BS: To be candid, I have no idea what the people fight over. The most valuable resource is water. They have to drill wells to get water. There are no natural resources and it is part of the Sahara. This has not stopped the genocide from taking place.

THC: That is really many people's lifetimes just captured in a few years.

BS: I guess I have seen parts of Africa that no other Singaporean would ever go to. That's the main reason why I left clinical practice, to pursue something out of the hospital and clinic. What I tell people is that Ophthalmology is too lucrative so I took up a job that doesn't pay so well. *(laughs)*

THC: Why did you come back to Singapore? You could have eventually stayed on in New York and continued in international healthcare policy building and humanitarian aid. What brought you back home?

BS: I was seconded to the UN and like all secondments, there was an end to it. When my term ended, the SAF needed me back in Singapore, so I came home and continued my career with the SAF.

Developing local biomedical R&D

THC: While you were with the SAF, you became a consultant for the Ministry of Health and now, you're obviously sitting in a big research and development (R&D) space in biomedical sciences. How has your experience been so far?

BS: This is a very challenging job, partly because BMRC is a huge organisation with about 2,000 people and substantial resources to look after. There is also great accountability with this job. I find myself accountable for the outcomes of the investments that Singapore has put into the biomedical sciences.

THC: I think many of us who are on the ground as clinicians are watching the evolution of R&D in Singapore, so how do you measure the outcome? For example, the Ministry of Trade and Industry will have to measure the outcomes of a F1 race or a gaming industry. How do you measure the outcomes of an R&D industry?

BS: One of the key outcomes would be the amount of investments that the private sector contributes towards biomedical R&D in Singapore. These investments can take different forms. At one end, multinational corporations (MNCs), like Procter & Gamble (P&G) and Chugai, set up large R&D facilities here. For example, P&G will be spending more than \$250 million, while Chugai has committed to spending \$200 million. These are substantial investments in R&D for Singapore, and create jobs for people trained in science. There are smaller deals as well, where companies set up R&D labs in Biopolis, or enter into collaborations with one of our institutes. The contributions could be provided in kind, for example, equipment, consumables or people, or cash contributions.

THC: The question now is that this will very much be the model of Singapore's economic growth, like in the 70s and 80s, where direct investments from MNCs come directly to the country. In addition, would it not be an important

outcome to grow local talent, and product development and discovery?

BS: There's two parts to your question, so I'll talk about local talent first. But before doing so, let's take a step back and ask what Biopolis is really about. The obvious part is the research infrastructure. Infrastructure as in buildings, labs, research institutes – these are easy to build. They form the hardware of Biopolis. But the important part is really the software – the people that fill these buildings and labs. Without good software, nothing runs.

When Biopolis started more than ten years back, there was a lack of scientists in our universities. It was necessary to bring some of the best people from different parts of the world to start our research institutes. This was what Philip Yeo did. The other effort was to place emphasis on the training of young people, young Singaporeans, in science. To date, A*STAR has sponsored more than 1,100 scholars in both the biomedical and physical sciences over the past ten years. That's about a hundred a year on average. These young people have started to come back, and I must stress that a Science or Engineering PhD takes time – they are coming back and starting to fill the ranks in our research institutes. We now have Singaporean leaders heading some of our institutes. These are homegrown Singaporeans who have made their mark in science.



A collection of unique artefacts, that BG (Dr) Seet has collected from his travels to different parts of the world, decorates his office



On tour of duty in Timor Leste in 2002



BG (Dr) Seet with Dr Colin Teo (left) and senior medic Subramaniam Selvaraj (right) at an SAF medical post in Timor Leste

Notwithstanding, there is still a need for international talent because one of the most compelling features of Biopolis is its diversity. More than half of our people come from 60 countries. This probably makes us one of the most heterogeneous science hubs anywhere in the world. It is through this diversity that we draw the best talents from all continents, including Europe, North and South America, and the Middle East. At the same time, they are complemented by Singaporeans, including A*STAR scholars, those from overseas who have come home, or who have trained in our local universities. This mix of talents adds to our competitiveness.

THC: With the production of such high levels of talent in Singapore in the form of A*STAR scholars, are we able to fulfil their aspirations? Are there enough opportunities to do so?

BS: Actually, the universities produce more PhD graduates than A*STAR – that is part of their academic mission. When you look at any competitive research institute anywhere in the world, not every postdoc becomes a principal investigator (PI), and not all PIs become a professor or centre head. They do not all end up in a career in science and research. This really depends on the individual's aspirations. I talk to young scholars all the time and it is clear that many have different aspirations at different stages of their careers. We try to develop multiple pathways for our young scientists, this provides opportunities for them to realise their potential in different areas. Some stay with A*STAR, others join academia, take up teaching jobs in our polytechnics and junior colleges, work in companies or government agencies. A small number have spun out companies, those with entrepreneurial spirit. It is good for them to work in companies, whether in Singapore or the region, as they become our extended network.

THC: With regard to roadmap of the Biopolis, is there another place in the world which has this clustering of activities? Can the Biopolis draw parallel to any organisation? I was in Boston for two years and Boston has become highly successful but it wasn't a state-run or state-planned system. It was a ferment of universities and biotech industries.

BS: The Boston cluster has developed over about 90 years, the Greater San Francisco cluster for 30 years. They are at a particular stage of evolution where they are not dependent on state-sponsored support. You have the venture capitalists, the foundations that provide private money for research to supplement university endowments and public grants.

Singapore is at a totally different stage of development; we are talking about a ten-year-old enterprise. We are also not alone as there are similar clusters that have developed in China and other regional countries. In China, they have six clusters in cities like Shanghai and Beijing. They have clusters in Korea and Japan, for example, cities like Tokyo and Osaka. The idea of a science park or industry park is not novel, clustering is a good way to share infrastructure and to build critical mass to support industry development. I don't think we're alone in this. We might have started earlier than others, but we were not the first and we will definitely not be the last.

THC: Korea and China are doing well and we're hearing that their output is quite high. How do we relate competitively?

BS: We are different because when you look at China and in the future, India, and even at Korea and Japan, they have a domestic market, which is something we will always lack. If China makes pharmaceuticals for the Chinese population, that's close to 20% of the world population. Same goes for India. We're not in the same league, we're not there for

the mass market. What we have to do is find our niche, to specialise, to find that competitive advantage. We need to target and sustain our investments in niche areas. I think that as long as we can find our niche, we can stay in the game.

THC: There are a lot of discussions about systems thinking and systems engineering, so how does one apply that to a big organisation? What are some of the key levers involved in running such a large organisation full of amazing talent and yet, at the same time, poses certain complexity of challenge as well?

BS: When you look at the system we're talking about, this actually goes beyond A*STAR because it encompasses the wider biomedical science R&D system in Singapore, which includes other players like the universities and hospitals. I guess the true challenge is how all of us can work better together. There are obviously stovepipes that get in the way of different institutions coming together. If we look at the overall ecosystem, we don't want too much competition between public sector R&D centres, we don't want duplication or triplication of expensive equipment, which we are starting to see, like in bioimaging. Such proliferation is expensive and lead to suboptimally used facilities.

Another point is integration and convergence. It is not about forcing everyone to be centralised in one facility, it is not about trying to integrate parts that don't fit well together. The convergence of capabilities, from across multiple institutions into focal areas, make us more competitive. One good example is the project between the Genome Institute of Singapore and the National Cancer Centre, to put together a stratified approach to cancer treatment in the clinic.

THC: Obviously, BMRC has restructured itself and no longer finances extramural programmes. There is a feeling from the outer community that they are not part of this enterprise. What's your comment on this?

BS: It is true that the funding allocated to A*STAR for the current budget tranche does not include a budget for extramural grants. Such funds are now made available by the National Medical Research Council or the National Research Foundation through different competitive grant mechanisms. So there is still money in the system, just that it comes in a different form.

Concluding thoughts

THC: Let's say, throughout your life, who are the people who have shaped your thinking in life, in the way your direction has gone, whether it is real mentors or otherwise?

BS: I guess there's no one individual. I would say that

different people have impressed me for different reasons. For example, Kofi Annan is very inspirational. When I worked for him in the UN, the thing that struck me was his candid nature, his great sense of humour. He was a persuasive speaker and could bring humour into the most difficult situations.

For systems thinking, it would have to be the previous Chief of Defence Force, Lieutenant-General Neo Kian Hong. He is able to see different parts of complex problems and put it all together. You really need to understand the fundamental issues behind any proposal you bring to him if you want to get it past him.

But when I look back, the one person I really could not have done without would be my wife, Boon Shya. She was behind me every time I wanted to do something different – whether it was to join the SAF, to leave clinical practice, to work for the UN. We relocated from Singapore to the US three times – which meant that we changed homes a total of seven times in as many years. She ended up disrupting her career to support mine. It wasn't easy for her but I'm glad she was there with me each step of the way.

THC: How do you relax outside of all the heavy responsibilities on your shoulders?

BS: I do a bit of this and that with my family. Saturdays are for sending kids for dance classes and drum lessons, the typical Singaporean parent. I guess I'm like many other parents, using the weekend to try to catch up on family time. Cooking, photography, Xbox games with my son – he beats me all the time! Even my reading habits have degenerated to reading books the kids leave lying around. I have been trying to catch up on my sciences though – I'm currently making my way through textbooks on Molecular Biology, as well as Epigenetics.

Hobbies? I have an esoteric hobby. I'm an aerotractologist – I collect and study airdropped propaganda leaflets.

THC: I don't presume you can collect many from Singapore...

BS: I collect leaflets from Malaya and Southeast Asia, from World War II and the Malayan Emergency. These are actually airdropped from planes over the jungles. I'm an amateur military historian. In fact, I'm writing a book on this subject, which has been about two or three years in the making. Over the years, I've put together what is probably the most comprehensive collection of Malayan leaflets. These encompass British propaganda against the communists, against the Japanese soldiers, and for civilian populations across Southeast Asia. I guess it's about trying to be different not only in my career choices, but right down to my hobby. **SMA**