

## The Outram Campus: Seat of Learning or Service Centre?

Tan Ser Kiat *FRCS, FAMS*

Singapore Health Services Pte Ltd

I would like to start by quoting the motto of the Postgraduate Medical Institute (PGMI) of the Singapore General Hospital — “*Melius Medicus Scientius*” — which in Latin means “*the learned doctor is the better doctor*”. Since time immemorial the practice of medicine has always been considered both an art as well as a science. However, over the last century, medicine has evolved to one which is more science-based than art. Be that as it may, practitioners should be considered as learned people, steeped in the principles of science and cultured and respected as men and women who know the art of healing the sick both in body and mind. As the complexities of modern societies and socio-economic factors begin to influence the way doctors and institutions practice are run, the care of the sick and infirm becomes healthcare provision and patients become customers. Public medical institutions are in danger of losing sight of the ideals of the practice of medicine and are fast becoming healthcare service centres geared towards short-term popularity and slick and gimmicky salesmanship. Perhaps it is time to take stock and reflect on our past so as to determine our own future. Hence, it is appropriate for me to briefly take you back in time to understand why we are here, where do we want to go and what do we want to be.

### HISTORICAL PERSPECTIVE

SGH's humble beginnings started in 1821, 2 years after Sir Stamford Raffles landed in Singapore. The hospital was located in a small wooden shed situated at a site which is Bras Basah Road today and was primarily set up to treat soldiers and officers of the British East India Company. From this wooden shed, the hospital progressed rapidly to being situated in proper buildings and treatment was extended to the locals.

The hospital was rebuilt several times over the next hundred years to accommodate the rapid expansion of services and demand as Singapore grew in importance in the British Empire in the Far East. It was staffed primarily by British doctors, as there was no local medical school at that time. The handful of non-British staff appointed as sub-assistant surgeons attended to the colonial doctors on their visits and ward rounds even though they were qualified doctors on the same standing as their British counterparts.

As demand for services grew with the growth of the population and entreport trade, the expatriate staff manning the hospital was unable to cope. Pressure to start a local medical school began to gather momentum towards the end of the nineteenth century. But it was not till the turn of the century that the dream was realised. Local philanthropist and trader Lim Jiak Kim raised a princely sum of \$87 000 and together with the colonial government's help, the first medical school, the Straits & Federated Malay States Government Medical School at Sepoy Lines was officially opened in July 1905. In 1920, it was renamed King Edward VII College of Medicine. In 1949, together with Raffles College (Arts College), it formed the nucleus of the University of Malaya and was subsequently renamed the Faculty of Medicine.

The School of Nursing was founded in 1956 to address an urgent need for trained local nurses. The picture was completed when the School of Radiography and the School of Pharmacy (part of the University of Singapore) were established in 1963 and 1965, respectively, to address similar needs for such personnel to man the expanding hospital.

Sir Lawrence Nunns Guillemard, Governor of the Straits Settlement, set the stage for rapid development with the opening of the rebuilt SGH in 1926. This, however, was overshadowed in the war years (1942 to 1946) with the Japanese Occupation. The Japanese

---

\* Delivered at the SGH 14th Annual Scientific Meeting on 26–27 September 2003.

Army took over the hospital in February 1942 and used it as their main surgical hospital in Southeast Asia. After the war, the reconstruction of the severely depleted medical establishment took up much resources and time. It led to the formation of the unit system in which patients were grouped according to the nature of their illnesses — the beginning of specialisation.

### **THE ERA OF SPECIALISATION**

The advances in medical science and technologies in the sixties led to the formation of several broad specialties of surgery, internal medicine and diagnostic services. As further progress in these fields could only come about with the formation of specialised departments, coordination in development was much needed.

In 1970, the Ministry of Health (MOH) appointed the Committee on Specialisation to examine the extent of development of medical specialties in hospitals, and to recommend a programme of development. The committee proposed that SGH be re-designed to house a number of additional specialties — neurosurgery, cardiothoracic surgery, plastic and reconstructive surgery, paediatric surgery and nephrology. These specialties were subsequently developed, but with neurosurgery and cardiothoracic surgery at Tan Tock Seng Hospital.

The next 20 years saw rapid development in the main specialties of medicine and surgery and the spinning off of several sub-specialties as separate departments. The departments of gastroenterology, respiratory and critical care medicine, neurology, nephrology, and endocrinology were spun off from internal medicine while urology, colorectal surgery and paediatric surgery broke off from general surgery. Hand surgery became a separate department from orthopaedic surgery and plastic and reconstructive surgery in 1985.

### **RESTRUCTURING AND REORGANISATION OF HOSPITALS AND NATIONAL SPECIALTY CENTRES**

The 1990s saw the restructuring of institutions and formation of national specialty centres. The objective was to give these institutions greater flexibility and responsiveness to the changing operating environment while requiring management to have full financial and operating accountability. April 1989 saw the restructuring of SGH into a corporation with autonomy of operation. The formation of National Specialty Centres was implemented for tertiary and quaternary specialties, which deal with important disease conditions. The objectives were for such centres to

achieve critical masses of patient loads and highly trained specialists in them so as to achieve regional and international excellence. The Singapore National Eye Centre was the first to be formed in 1990, followed by National Dental Centre in 1997, National Heart Centre in 1998 and National Cancer Centre in 1999.

The final piece in these evolving changes was put in place with the grouping of public healthcare institutions into 2 clusters for more efficient and seamless delivery of services at the appropriate level and avoiding expensive duplication of infrastructure and manpower. A certain element of competition to improve the quality of management, I suspect, was also the intended objective behind the architects' thinking. For this reason, Singapore Health Services Pte Ltd (SingHealth) was born on 31 March 2000. This is where we are today — primarily a service campus with a fair bit of teaching and probably less of research activities.

### **THE FUTURE OUTRAM CAMPUS**

Moving forward, do we react and adapt according to changes that are thrust upon us and let the current of change sweep us to wherever it may flow? Or do we want to determine our own destiny by proactively planning, executing and charting our way forward in the midst of political, socioeconomic and technological currents, capitalising on opportunities and influencing changes in our favour? This surely must be the preferred option. We must then decide what we want to be — a merely good service campus doing more of the same or a great learning campus providing excellent clinical service through innovations, learning more of the undiscovered and harnessing this to even better patient care.

As I look ahead into the immediate future as well as the horizon, I see exciting and challenging opportunities, which if seized, will lead us to greater heights. However, even as we plan and move forward, we have to realise that the journey is certainly fraught with dangers and surprises. We have to learn to anticipate surprises along the way, expect the unexpected and prepare to deal with the unknown and unseen. Our recent humbling experience by a simple coronavirus in spite of our sophisticated and technologically advanced healthcare system provides a painful reminder of our vulnerability.

#### ***Clinical Service***

Our primary national obligation and responsibility both to MOH and society is still service — providing excellent, affordable and accessible care to the ordinary man in the street. We have in many ways fulfilled this

part of our bargain. Not only have we done this, we have gone beyond and have achieved a number of clinical groundbreaking successes. Our achievements have not gone unrecognised. Even the highest office of the land has commended you. For that I salute and congratulate of all you. You must continue to do this — climb higher mountains of clinical and service success to maintain our established reputation. Management has and will continue to strongly support clinical innovations and set the highest standards of practice.

Even as we pursue our goal of excellence, our clinical system and infrastructure must be able to withstand the onslaught of epidemics normally associated with poor third world countries lest we undergo another humiliating experience.

### **Education**

While medical education originated in the Outram Campus in the early part of the 20th century, the moving out of the medical school to Kent Ridge has diminished some of SGH's role in the training of doctors. However, its importance in postgraduate and specialists' training has been well recognised. The campus is responsible for training more than 60% of the nation's specialists.

The teaching arm of the campus must fulfill 2 major aspects of professional education:

1. Structured and Didactic with Proper Pedagogy — the Teaching and Training Curriculum of the Medical Course of the University and the Structured Training Courses of Advanced Specialists Training Programmes

Undergraduate medical education has long been the preserve of the University with almost all the didactic teaching and academic appointments and activities centred on the University campus. Our direct involvement and siting some of these programs within the Outram Campus will only serve to enhance our standing as an Academic Medical Institution. The recent appointment of one of our very own to the Chair of Surgery bodes well and is a move in the right direction. I would like to applaud the University on taking this courageous step in appointing the best man for the job, irrespective of location and employment of the individual. Some of the very best brains in the profession are to be found within our campus and we certainly look forward to more of such appointments. Our own staff must strive hard to continuously upgrade the quality and relevance of

our undergraduate teaching programme and, in the Vice-Chancellors' own words, give the other campus (Kent Ridge) a run for their money.

The recent proposal and acceptance of the establishment of a second NUS campus in Outram is indeed another indication of the high regard the nation has for our teaching standards and track record. I'll discuss this later in conjunction with the Graduate Medical School (GMS).

As mentioned earlier, the teaching and training forte of SGH lies in the postgraduate area, in particular specialists training. We train the majority of specialists in most disciplines. Our trainees boast the highest passing rates, which are significantly above the national average, in postgraduate examinations. We must make sure that we continue to remain the dominant force in postgraduate and specialists education, not only for our own reputation, but to ensure that renewal of our specialist brainpower is secure. We want the very best to train and work with us and contribute in making the Outram Campus the medical hub of excellence.

2. Continuing Professional Education for Doctors, Nurses and Other Allied Health Staff

This is one of the most important key components of professional education. The exponential advances made in medicine and life sciences mean rapid obsolescence of knowledge and technologies in today's operating environment. Specialists, nurses and other allied healthcare professionals must continuously keep themselves abreast of the latest advances. I will not be too far wrong to say that practising professional certificates have a shelf life and need to be revalidated at regular intervals in the best interests of patients and other stakeholders. I'm glad that the Singapore Medical Council has implemented compulsory continuing medical education (CME) to ensure that doctors keep themselves updated and are "fit" to practise. I must also congratulate PGMI for doing an excellent job in running CME programmes and will urge it to continuously review and improve upon the programmes, workshops and other activities so as to help SGH maintain its premier position. I also urge other professionals to move along similar directions.

3. Graduate Medical School

Much interest and excitement has been generated in recent months on the establishment of a GMS

in the Outram Campus as part of the bold plan to expand the National University of Singapore (NUS) into 3 campuses. Planning has now gone beyond the preliminary stage and the recent signing of the intent to establish a second medical school in collaboration with Duke University reaffirms our total commitment. This ambitious project will involve active participation and collaboration with Duke and NUS. The role and emphasis of this new school will be different from the current undergraduate programme at NUS. It is really not to produce more of the same, but a different breed of doctors who are more mature and are encouraged to move into research and development (R & D) in the life sciences. A 4-year course, admitting only students who have a basic degree, is targeted to commence by July 2006. The curriculum will emphasise problem-based learning and research.

The final realisation of establishing a second medical school here culminates many years of hard work and lobbying by several stalwarts here in the Outram Campus. They have managed to convince and win over the authorities on its value and necessity if we are to succeed in building the biomedical wing of the national economy. I would like to pay tribute to these people whose vision and perseverance resulted in a dream come true — it is truly a homecoming for medical education to the Outram Campus.

It will also enhance our status and reputation as an excellent academic medical institution, seeking to continuously improve patient care and breaking new ground in advancement in healthcare. This new exciting development will also mean greater opportunities for our staff to maximise their potential and will bring us that much closer to being a centre of medical excellence, thereby adding value to our clinical and other biomedical services. I'm grateful to all who have helped make this a reality.

### ***Research***

The research arm of the campus is probably the least developed of the 3 pillars of our institution. This is an important area as research is basically the process of learning and tapping into as yet undiscovered knowledge that can be applied to clinical practice for the benefit of patients. Hence, it must be strengthened and systematically developed to complement and enhance our status as a learning campus.

Insufficient resource allocation and career limiting constraints historically have been the cause of this underdevelopment. Exciting changes and policies are now being put in place to stimulate this and with strong management support, I'm certain that we can see rapid progress in this field of endeavour. I believe we have sufficient talent and passion within SingHealth in general and the Outram campus, in particular, to bring this aspect to an equal standing with our 2 other pillars of clinical service and teaching.

We have re-organised our previous Research Steering Committee into a Research Council and have appointed a fulltime scientific director to spur and take this to a higher level. Career development in research has been boosted by the creation of a Clinician Scientist scheme that will allow talented medical researchers to concentrate and exploit their passion and ambition in the discovery of the unknown, without remuneration and career disadvantages. Furthermore, significant space and infrastructure have been added to our physical resources at the refurbished School of Nursing buildings. This has allowed us to meet the growing demands of our clinicians and scientists for expansion. In addition, we have set aside additional funds from our operating budget to supplement the annual grants from the MOH, National Medical Research Council and Biomedical Research Council as well as industries.

These initiatives and actions represent strong management commitment to developing a strong and excellent research pillar. We need your equal commitment to carry this to fruition.

I see great potential in the following areas, which must be exploited if we are to succeed:

#### 1. Clinical Genomics

With completion of the sequencing of the Human Genome in 2000, we are about to witness revolutionary and profound changes in the way we practice. Pharmacogenomics, proteomics, gene therapy and many other exciting downstream developments are opening up whole new fields of treatment possibilities. The application of genomic information and knowledge to clinical practice must surely be the medicine of tomorrow. Failure to recognise and exploit this will relegate us to mediocrity and the backwaters of medicine.

#### 2. Clinical Trials

Drug development has been proven to be one of the most significant areas of progress in medicine today. Properly conducted clinical trials under

stringent ethical, biological and legal controls have yielded significant gains for patients and institutions. The financial benefits for the institutions will see increased resources for further research and development. Examples of such successes are seen in the development of the cox-2 inhibitors and the sildendafil agents. We can be the test bed for new drugs and other therapeutics for clinical conditions that are peculiar in this part of the world, such as nasopharyngeal carcinoma, hepatitis, hepatomas, and diabetes mellitus. This is particularly so in re-clinical as well as Phase I and II trials.

With the establishment of the GMS, we envisage that a Singapore Clinical Research Institute will be set up to spearhead this and take it to greater heights.

### 3. Biomedical Engineering

Much interest and work has been done over the past decade on the application of engineering concepts into the practice of medicine. Several exciting innovations have been created to solve difficult clinical problems, such as the vertebral cage in spinal fusion for spinal instability. The close collaboration between SGH and the universities' engineering departments has resulted in many of these innovations. I urge that these efforts be strengthened and expanded to other areas of practice, such as in neurology in the treatment of the paralysed and implants and support devices in cardiology.

### 4. Tissue Engineering

The importance of culturing and manipulating cellular elements for clinical application has been well known for several years, for example in skin culture for the treatment of severely burnt patients. This area of research promises to be yet another breakthrough in our search for better alternatives for diseases of the aged and the injured. Promising work, I'm told, is being done in the areas of orthopaedics and cardiology.

### 5. Translational Research

Basic bench research must, at the end of the day, be translated into clinical applications of significance. It must result in better and more efficient clinical outcomes. Otherwise, it will remain within the realms of esotericism — intelligible and interesting only to the scientists, with little or no clinical significance.

### 6. Information-Based Medicine

This is an area of great interest and has tremendous potential in taking us into the international league of medical hubs. It involves the use of information management and technology, especially for post-genomic downstream areas such as proteomics and system biology. Researchers can couple our knowledge about gene expression (i.e. genotype) directly to disease expression (phenotype). Customised medicine then becomes a strong possibility and will play an important role in future healthcare provision. It also involves the use of information technology to build R & D knowledge management solutions and the application of advances in life sciences in medicine. It is important to start building of information systems, such as knowledge management solutions, to treat and accommodate the large amount of data from R & D areas. This is especially important in clinical genomics.

## REBUILDING OF THE OUTRAM CAMPUS

I've been asked several times over the past few months on the decision and outcome of the proposed rebuilding of this campus. The current SGH buildings are more than 20 years old today and those which house some departments are even considerably older and run-down. It is only logical that given the current condition, a new hospital complex needs to be built to bring SGH and the National Centres together to function cohesively and more efficiently as a team, centred around the patients, with state-of-the-art infrastructure and equipment. We started the process of developing a Master Plan for the Outram campus early last year. We invited renowned firms to submit concept proposals for the Master Plan. We were excited and impressed with the concepts submitted and are still in the process of finalising the Master Plan, which will include provisions for the new GMS.

However, given the current economic condition, it is likely that the rebuilding will be delayed. We will, however, be making strong representations to proceed with Phase I as this will involve services that are in urgent need of new and expanded premises.

## CONCLUSION

Ladies and gentlemen, SGH has existed for 182 years. It has come a very long way from its humble beginnings in a wooden shed at Bras Basah Road as a service centre providing very basic care. Today's SGH and the

National Centres are excellent centres for clinical services. Medical and professional education has not developed at the same pace as its service arm. Research, with the exception of a few, has fallen even further behind. SGH and its sister centres in the Outram Campus must take on the challenge of excelling in all its 3 pillars of foundation and become a medical hub of great repute. As a Seat of Learning, not only must you possess the ability and capacity of educating future generations of healthcare professionals who must surpass their teacher-masters, but instill and nurture that spirit of continuous learning and discovery. They must learn not only from established and accepted sources, but must themselves strive to learn to discover the unknown and the undiscovered, seeking new information and revalidating or otherwise of the old. Do not be afraid to challenge old norms and try and test new ways, even though these may appear ridiculous initially. Do not be just a another service centre, practising only the tested and leaving others to discover. You are then no different from thousands of others.

*"If you do not attempt the absurd, you cannot achieve the impossible"* my old chief used to tell me.

I would like to end on a quotation from Sir William Osler, Professor of Medicine at Johns Hopkins University's School of Medicine in the late 19th century:

*"To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not go to sea at all"*

Knowledge and information must go hand in hand with clinical practice. Didactic, structural and continuing education and the innate learning ability to discover the yet to be discovered will strengthen our position as the Centre of Medical Excellence and Innovation. We must embrace these passionately before we can graduate into the premier league of world class institutions.

Thank you.