

Addresses at the 50th Anniversary Celebration of the Department of Orthopaedic Surgery, National University of Singapore on 5 April 2002

Over 200 guests were gathered at the Fullerton Hotel Ballroom on the 5th of April 2002 to commemorate the 50th anniversary of the Department of Orthopaedic Surgery, National University of Singapore. The event was dedicated to the teachers, past and present, for their commitment to education. Over a hundred teachers of clinical orthopaedics were present.

The Head of the Department, Professor K Satku, welcomed the guests who included the Dean of the Faculty of Medicine, Professor Lee Eng Hin, who was Guest of Honour; past deans including Professor Tan Chorh Chuan and Professor Edward Tock; University Professor and Past Vice-Chancellor, Professor Lim Pin; and many other distinguished guests.

The night saw the inauguration of the Best Clinical Teacher Award and also the launch of the Khong Ban Tze gold medal for the best graduating undergraduate in

orthopaedic surgery at our medical school. The student who achieved this distinction, Dr Goh Wei Ping, was present and together with his colleagues put up a sketch reminiscing their undergraduate days.

A video presentation produced by the staff traced the history of the department and the orthopaedic service in Singapore over the last 50 years. This was indeed one of the highlights of the evening.

The night also witnessed addresses by the Dean, Professor Lee Eng Hin; Professor P Balasubramaniam, a past member of the Department and current Professor of Sports Medicine at the University of Malaya; and Dr V K Pillay who was a student at the inauguration of the department and who later became the first local head and professor of orthopaedic surgery at the department. Their addresses are reproduced below.

Academic Medicine

Distinguished Guests, Colleagues and Friends:

I am extremely delighted to see so many of you here tonight to help celebrate the 50th Anniversary of the formation of the University Department of Orthopaedic Surgery. I am very proud of the achievements of the department over the last 50 years, and I say this not because I am a member of the department because I truly believe that the department has made significant contributions to the University, society and the community.

Let me begin by expressing my gratitude to Professor Satku and the Department of Orthopaedic Surgery for their thoughtfulness in organising this wonderful appreciation dinner and inviting all of us here tonight to share in this important milestone. From its humble beginnings, the department has gradually grown in stature, and today has gained recognition regionally and internationally for its contributions to undergraduate education, postgraduate training and research. In the past 5 decades, the department has produced many leaders in the orthopaedic field in Singapore and the region. Many of these individuals are not only leaders in orthopaedics, but hold important and



Fig. 1. Professor E H Lee delivering his address.

responsible positions in their respective hospitals, healthcare organisations, professional medical bodies, as well as volunteer welfare organisations. These accomplishments could not have been made without good leadership and the commitment to education and training not only by all the university staff but by the collective effort of the whole orthopaedic community, whose members have selflessly

given their time and effort to nurture our young. I salute the orthopaedic community for their dedication as well as their co-operation and cohesion that has made this possible.

In keeping with the theme for this celebration “50 years of Commitment to Education”, I would like to take a little time to talk about Medical Education, the challenges we face today and the future of academic medical practice in Singapore.

First, I would like to talk about current trends in medical education and the changes we have made to our curriculum to ensure that we remain current and relevant. Some of you may not know that we are one of the few medical schools in Asia whose graduates are recognised by the UK General Medical Council for full registration.

The Faculty recently conducted a complete and comprehensive review of the medical curriculum and implemented the new medical curriculum in 1999. Following worldwide trends, we felt that it was necessary to make the medical curriculum more relevant in the face of changing demands on doctors and the provision of healthcare. Some of the more important factors that we had to consider were the recent explosion of new medical knowledge and technological advances, the advances in information technology (IT) and a better informed and better educated population. In addition, there was a worldwide push towards evidence-based medicine as well as cost containment in the provision of healthcare. Taking all these factors into consideration, we designed a curriculum that we hoped would ensure that our graduates would have a sound scientific basis for the practice of medicine, be clinically competent, have good analytical skills, excellent communication skills, appropriate attitudes of compassion, honesty and empathy, and demonstrate the highest standards of professionalism, ethical behaviour and practice. In addition, the graduates would develop intellectual curiosity and the habit and skills for life-long learning and professional development.

With these goals in mind, and after extensive consultation and deliberation with all the academic staff as well as clinical faculty from our teaching hospitals, we were able to design a new curriculum that essentially allowed us to reduce factual overload in some disciplines by as much as 40%, introduce problem-based learning to encourage students to be more active and self-directed in their learning, introduce special studies modules to allow students to learn beyond the core, and have more elective time in the clinical years to allow students to either catch up or to go overseas to broaden their clinical horizons. We also strengthened the ethics component of the course and introduced special sessions on communications skills. There was a deliberate attempt to integrate the course vertically and horizontally such that the preclinical subjects were taught in an integrated

fashion along tracks, and was faculty-driven rather than department-based. The preclinical and clinical divide was blurred by allowing the students to have earlier clinical exposure to patients. In the clinical years, a core curriculum was defined for all the clinical specialties and students and teachers alike were informed of the knowledge and skills that the students have to acquire during their clinical training. In the final year, a student internship has been introduced to allow students to serve as junior house-officers so that they will be able to function more effectively when they become real housemen.

As the learning objectives were clearly defined, the assessment was also aligned to measure the students' performance based on the learning objectives. More emphasis was placed on continuous assessment which has become more structured. The final professional examinations will be based on two tracks: a medical and a surgical track so that students can be examined in a more integrated fashion.

And now, I would like to address the more controversial and challenging topic of Academic Medicine. The practice of Academic Medicine involves commitment to the 3 key components of Teaching, Clinical Service and Research. All 3 areas are intimately intertwined and form a powerful union and each on its own does not inherently have the same strength or impact. It is believed that a good academic clinician is not only able to look after patients well, but is able to impart the proper knowledge and values to the student and serve as a good role model and, through research, is able to improve patient care and enhance the reputation of the hospital and the school. A good academic medical practice demands a lot of commitment by the clinicians and the hospital in terms of time, resources and funding.

Academic staff and clinical teachers today are very busy looking after patients and have little, if any, protected time to teach and do research. Hospitals continually demand more and more of the clinician's time to manage patients. The reward systems for teaching and research are not usually comparable to that of doing primarily clinical practice. This has resulted in many young clinicians losing interest in teaching which is so vitally important to bringing up our next generation of doctors. Although seemingly a recent trend in Singapore, Osler has written at the turn of the 20th century about this dilemma, “*The young man may start with the ardent desire to devote his life to science,.... but he is soon dragged into the mill of practice, and at 40 years of age the ‘guinea stamp’ is on all his work*”.

In the past decade, much has been written about the problems facing Academic Medical Centres (AMCs) in the United States. Medicare in which subsidies were given to AMCs for their teaching role have been taken over by

Managed Care which has become more and more interested in bottom line. Health Maintenance Organisations or HMOs have taken over healthcare in many States in the US and have almost absolute control of how patients should be managed by doctors. Much of what has been written is beginning to become relevant in our own national scene. In the *N Engl J Med* article entitled “*Managed Care and Medical Education*”, Robert Kuttner states, “...*medical education is a social cost that cannot possibly earn a profit on its own terms and is a cost that must be borne collectively*”. Arnold Relman, former editor-in-chief of *N Engl J Med* and an emeritus professor of medicine at Harvard University, has written on the crisis of medical education in the 2 October 2000 issue of “*The New Republic*”: “*Teaching hospitals can't be cost-effective while supporting research, caring for low-income patients and training students. But our current health-care system, now dominated by industrial practices and a Darwinian free-market philosophy, has little or no interest in helping teaching hospitals bear their heavy social burdens*”.

In Singapore, the recent introduction of Diagnosis Related Groups (DRGs) into the Singapore Health System has affected subsidies to teaching hospitals such as the National University Hospital (NUH), with the removal of the 10% premium in subventions to the hospital. In Australia, there is still a 10% to 15% subvention to Teaching Hospitals to help with the increased costs of teaching. Teaching and learning new techniques usually takes a longer time as there is a learning curve. This adds on to the cost of running a hospital. However, keeping up with technological advances and doing cutting edge clinical research is extremely important for an academic medical centre. Being able to do complex procedures, such as liver or heart transplants and the recent successful separation of the Siamese twins by the team in SGH, requires a great deal of skill and planning. Although extremely costly, the returns are immeasurable in terms of the skills developed and the reputation of the hospital.

The Medical Education Review panel in their recently released report expressed concern over the lack of protected time for our young doctors who work very long hours in hospitals. They also felt that there is an urgent need to produce clinician-scientists as well as to protect the time of clinicians to do research. The National University of Singapore (NUS) is addressing some of these needs by increasing the intake of medical students in the current undergraduate entry programme. To produce clinician-scientists, we have started a MBBS PhD programme. With Singapore's drive in Biomedical Sciences, it is very important that we nurture and protect our young doctors and create an environment that would encourage them to pursue research with adequate rewards and career paths.

The philosophy of research today has changed substantially. Instead of creating knowledge for the sake of knowledge, there is now a heavy emphasis on exploiting the knowledge for commercial gains. University academics are now driven to some extent by the slogan “patent or perish”, rather than the original “publish or perish”. The pursuit of Intellectual Property (IP) has become a very important factor in research. Our Deputy Prime Minister, Dr Tony Tan, in a speech last year, said that Universities must create, impart and apply knowledge. Mr Philip Yeo, Chairman of A*STAR, has aptly changed the meaning of the abbreviation COE to mean “create, own and exploit”. For a small nation like Singapore, these changes are necessary for our long-term economic survival. However, we should also be aware of potential conflicts that can arise from the recent trend of commercialisation of medical research. In the pursuit of IP, the availability of new knowledge for the good of humanity has to be preserved. A good example is the tremendous value of the information derived from the Human Genome Project. If the information is restricted due to IP issues, the progress of research will be severely hampered. In addition, many academics have ties with industry, not only in terms of grant support but also in a host of other financial arrangements such as serving on advisory boards or helping to promote their drugs through oral or written communications. Incentives for doctors, such as gifts, free trips, and many other inducements, are common. In the area of drug trials, this has become a potential area of conflict, as pointed out in the *N Engl J Med* editorial of May 18, 2000 — “*Is Academic Medicine for Sale?*” — written by Marcia Angell. She gives an example of the difficulty she had in trying to find a prominent psychiatrist to write an editorial on antidepressants. There were very few who did not have financial ties with drug companies producing these medications.

With all these changes occurring in the healthcare scene, an inevitable conflict between the education and training of doctors and cost-effective provision of medical care has emerged. Where do we go from here? I think it is time to reflect and to re-examine ourselves and our organisations in terms of our values, missions and goals. At this point, I would like to go back to Osler and I quote, “*You are in this profession as a calling, not as a business; as a calling which extracts from you at every turn self-sacrifice, devotion, love and tenderness to your fellow man. We must work in the missionary spirit with a breath of charity that raises you far above the petty jealousies of life.*” Is this possible in the 21st century? I think there are many doctors amongst us who still hold these values, but it is difficult to be altruistic in the face of current medical practice and remuneration practices in our healthcare institutions. We need to strike a balance between serving economic realities

in the new age and preserving the core values of academic medicine. We need to work hard to resolve these difficulties. I propose that we work together with our healthcare institutions and the government so that we can continue to educate, guide and inspire our new generation of doctors to aspire to continue carrying the flag in the practice of academic medicine. We need to create a conducive environment, where teaching, research and patient care can co-exist with minimal conflicts for the doctor, facilitating their training and research by allowing protected time as well as adequate remuneration for those interested in pursuing research. We all know that there is a national initiative in the Biomedical Sciences. I feel strongly that

the clinician-scientists and the clinicians have a major role to play in this effort so that basic science research can be translated into useful products for diagnosis and treatment. Let us all work together to keep academic medicine alive in Singapore as this will ensure our place as a leader in medical education, research and clinical practice.

Thank you.

*Professor Lee Eng Hin
Dean, Faculty of Medicine
National University of Singapore*

The Future of Undergraduate Orthopaedic Education in Singapore

Prof. E H Lee, Dean Faculty of Medicine; Prof. Lim Pin, former Vice-Chancellor NUS; the two past Deans, Prof. Edward Tock and Prof. Tan Chorh Chuan; Distinguished Guests; Ladies and Gentlemen:

I have been asked by Prof. Satku, the Chairman of the Organising Committee, to speak on the Future of Undergraduate Orthopaedic Education in Singapore. The orthopaedic content of any undergraduate medical course is only a small fraction. In NUS, it is for about 3 months of the 5 years, which is 5% of the entire medical course. Justifiably, some medical schools do not have an orthopaedic posting at all, and some have it only as an elective. It is possible that in the future orthopaedics may get absorbed into an expanding department of medicine. We must therefore look at undergraduate orthopaedics in the context of a 5-year medical education programme and be realistic about it. Its future should not be taken out of context from the general plan of undergraduate medical education for it has to fit in with the objectives of the medical course. Though it is only a tiny fragment of the whole medical course, orthopaedic teaching in NUS is quite strong and 100 of the teachers are assembled here tonight to celebrate 50 years of orthopaedics in NUS. We have to be proud about it, for the department has contributed much to NUS, to Singapore and internationally.

The future is one of change as well as one of continuity. Undergraduate medical education, including orthopaedic education, has changed in NUS during the last 50 years. It will continue to change in the future, for change is the only permanent thing in this world. New developments in medicine, education and training will have a profound



Fig. 2. Professor P Balasubramaniam delivering his talk on the future of undergraduate orthopaedic education.

effect on the undergraduate teaching of orthopaedics. They are:

- Molecular cell biology,
- Medical technology,
- Information technology,
- An ageing population,
- Change in disease pattern,
- Affluence and change in the expectation of patients,
- A new breed of young medical students with expectations different from ours, and
- A new breed of orthopaedic teachers who are sub-specialised in various branches of orthopaedics.

This new breed of sub-specialised teachers will have different priorities and will not see the musculoskeletal system as a whole. This will lead to problems in teaching and examinations.

Medical science may change, patients may change,

students may change, but the art of medicine has not changed. The art is nowadays ignored and forgotten in preference to the science. This is due to undue emphasis on the scientific aspect of medicine at the expense of the art. Medicine is both an art and a science. Without the art, there is no medicine. Medical science alone is impersonal and cold to the patient. At the end of a 5-year medical course, we need a doctor who has the skills to listen to the patient, communicate with him, touch him, examine him, comfort him and lessen the suffering. All these activities are part of the art and they add quality to the care. The neglect of the art of medicine in preference to the science has brought in a crisis. The patients are unhappy now about the way we practise medicine and are seeking alternative medicine. How do we as doctors, orthopaedic surgeons and teachers of medicine respond to this change and crisis?

We must go back to the objectives of the course, the content of knowledge, skills and attitudes that have to be acquired during the course. Medical knowledge is exploding and further training of a new doctor has become necessary in Singapore. Therefore, we must prune unnecessary knowledge and not teach orthopaedics that is required of a postgraduate nor demand it in the final MBBS examination.

We need to retain our strength in clinical skills. This is our forte because of the British background of our medical education. Eighty per cent to 90% of orthopaedic diseases can be diagnosed on history alone or on history and physical examination. We must not throw them away for the sake of science and technology, but the limitations of

clinical diagnoses and the value of technology in such instances should be emphasised to the student.

Attitudes though important are difficult to teach. Teaching them through lectures and discussions though thought to be helpful becomes an abstract exercise that is soon forgotten. I see a quotation from Sir William Osler at the back of the invitation card for today's celebration. It reads, "*This high education so much needed today is not given in the school, is not to be bought in the market place, but is to be wrought out in each of us for himself, it is the silent influence of character on character*". Good attitudes learnt during daily practice from role models remains with us for life.

Lastly, we must look at the purpose of a university education for medical education though a professional one, is nowadays part of university education. What then is the purpose of its university education? It is neither for the knowledge nor for the degree. The 5 years of knowledge learnt in a medical school soon becomes out of date, for medical knowledge is changing fast. The purpose of university education is to improve the style of thinking and the quality of thought. If we as teachers have done that, then we have achieved something for our future.

Thank you.

*Professor P Balasubramaniam
Former Professor of Orthopaedic Surgery
National University of Singapore*



Fig. 3. Dr V K Pillay speaking on his experiences as a student and later a teacher in the Department of Orthopaedic Surgery, National University of Singapore.

Progress of Orthopaedic Surgery in the Last 50 Years in Singapore

In 1937, the first Orthopaedic Hospital for the treatment of bone and joint tuberculosis, the St Andrew's Orthopaedic Hospital, was opened. It was founded by grants from the Viscount Nuffield and generous Singaporeans. It was situated by the sea on the East Coast of Singapore and other than good nutrition, fresh air, sunshine, and tender loving care, very little could be done for TB then. The dictum of Hugh Owen Thomas, namely rest enforced, uninterrupted and prolonged, was the only orthopaedic contribution to recovery.

In 1949, the King Edward VII College of Medicine became the Faculty of Medicine of the newly created University of Malaya. I was among the last batch that joined the College of Medicine in 1948 and was among the first batch to enter the University of Malaya. Orthopaedic

Surgery was carried out by General Surgeons till 1952. Professor J A P Cameron, initially a General Surgeon who later trained to become an Orthopaedic Surgeon, became the first Professor of Orthopaedic Surgery in Singapore in 1952. The General Surgeons then agreed to look after the head injuries if the Orthopaedic Surgeons would look after the burns. The Department was at the end of the Norris block of the old Singapore General Hospital. Professor Cameron was subsequently joined by Dr Anders Karlen of Stockholm who had been working with the Swedish medical team in Korea. When Cameron returned to the United Kingdom in 1955, Anders Karlen became Professor. He separated Burns from General Orthopaedics and established the Burns Unit which later became the Reconstructive Surgery Unit. I don't think we quite understood Orthopaedic Surgery in our medical student days. There were a lot of club feet and polio deformities. There was trauma including paraplegia. We picked up a little orthopaedics from the various tutors.

On graduation in 1954, I returned to Malaya but I came back to Singapore in 1956. However, I could not get a traineeship in Surgery as I was not a blue-eyed boy of anyone. So I became an anaesthetic trainee, hoping I could find favour with a surgeon who might become my godfather.

In 1957 Donald Gunn, who was previously Orthopaedic Surgeon for Malaya in Kuala Lumpur and under whom I had done a period of my housemanship, came over to Singapore and became Senior Lecturer. As an anaesthetic trainee, I witnessed good orthopaedic care and management as practised by Anders Karlen and Donald Gunn.

Fortunately for me at that time, the Royal Australasian College of Surgeons (RACS) wanted to extend its sphere of influence. Professor Yeoh Ghim Seng, the Professor of Surgery, had invited the College to come to Singapore to run a course and hold the primary fellowship exam locally. As the surgical primary would exempt one from the anaesthetic primary, it was decided that those who wanted to do anaesthesia could also attend the course. Having passed my primary in 1958, I decided that I would become a trainee in Orthopaedic Surgery.

In 1956, a government unit, under the headship of an Englishman Mr D W C Gawne, was created and functioned side by side with the University unit. The theatres and outpatient clinics were shared and only the C-class wards were separate. William Fung was already at that time interested in orthopaedics and was working with Mr Gawne. Yeoh Kean Hong was also an anaesthetic trainee. Fung, Yeoh and I passed the primary RACS exam in 1958. As orthopaedic trainees, we were sent to the United Kingdom to do the Final Fellowship exams either in Edinburgh or London and then proceed to do the MCH Orth course in Liverpool. Bill Fung and Kean Hong left for the UK at the

end of 1959 and I joined them at the beginning of 1960. We passed the Final Fellowship exams early in 1960 and from June 1960 onwards all 3 of us attended ward rounds and clinics at the Royal National Orthopaedic Hospital in London. Bill, Kean Hong and I were fortunate to get into the MCH Orth course in 1961. We had a wonderful time together. William Fung was a favourite of Brian McFarland, the Professor of Orthopaedic Surgery. Bill could do no wrong. On the first day of our class, we were discussing a difficult problem in orthopaedics at that time, namely pseudarthrosis of the tibia, a hobbyhorse of McFarland. When it came to Bill's turn to answer, he kept absolutely mum. McFarland waited for a few minutes and said, "*Bill, what have you got to say?*" and Bill made the statement, "*Sir, it is better to remain silent and be thought a fool than to speak and leave no doubt*". Brian McFarland jumped out of his seat and wrote this on the blackboard, "*Confucius has spoken*". We qualified and returned to Singapore at the end of 1961.

By that time, Donald Gunn had become the Professor of Orthopaedic Surgery as Karlen had left for Stockholm. Gawne was still the Head of the Government Unit. Tham Cheok Fai, who was senior to us by a year or so, was then in Orthopaedics. Fortunately for Singapore, he decided to go back to the UK and train in Neurosurgery, thus becoming Singapore's first Neurosurgeon. Kean Hong and I were soon joined by Peter Wong, a New Zealand Chinese. Bill was joined by Balachandran who went for training after we returned. Bill succeeded Gawne in 1968. When Gunn left for the USA, I took over as the first local Professor. After I assumed the headship, we advertised for the post of lecturer. I selected P B Chacha as I had met him in the UK in 1964 when I spoke to the MCH Orth class in Liverpool on the topics of my interest. Soon I located Cheng Wei Nien who had passed the primary and was interested in orthopaedic surgery. He was the first trainee to be sent to the UK after us with only the primary fellowship. He went on to do both the English and Edinburgh Fellowships and the MCH Orth in Liverpool. In 1972, after strong disagreements with the Vice-Chancellor, I resigned along with Yeoh Kean Hong. Six months later, Cheng Wei Nien who was Acting Head also joined us. Chacha then became the Head and later Professor. In 1980, he too joined us in private practice and Kamal Bose took over.

In 1980, Bill Fung was succeeded by N Balachandran as the Head of the Government Unit. He oversaw the development of the various government orthopaedic units. When Kean Hong and I joined the department, Donald Gunn already had a good orthopaedic teaching programme and with 3 young enthusiastic lecturers, orthopaedic education and care improved enormously. Helping us was Dr Khong Ban Tze who was Research Associate. Karlen

and Gunn had started a good collection of orthopaedic slides with the excellent support of Ban Tze. This became one of the finest collections on the subject.

Unfortunately, it later became fragmented but still represents a fair collection. For Gunn's contribution to Singapore in the field of orthopaedics, he was awarded an Honorary Doctorate of Science, the BBM and a lecture in the SOA is named after him. The orthopaedic history of Singapore must include the formation of the World Orthopaedic Concern. Though I had left academic orthopaedics, I was most keen on orthopaedic education and care, particularly in the developing world. I was fortunate to be one of the founders of the World Orthopaedic Concern that was established in Singapore in 1975 after a symposium in 1973 in Oxford. The World Orthopaedic Concern promoted orthopaedic education and care throughout the developing world. We, in Singapore, concentrated our efforts to the training of surgeons for Indonesia. We had already participated in a training programme in Jakarta run by CARE. In 1970, Chacha, Balachandran, Kean Hong and I spent one month each in Jakarta. This is how Balachandran met Rita, a CARE volunteer nurse. Subsequently, the Senior-most Surgeons of Indonesia – Sularto, Chehab and Sukarna came to train in Singapore and this was in spite of Sukarno's "confrantasi". Mr Lee Kuan Yew, then the Prime Minister, personally assured me that the government would do whatever it could to help Indonesia in spite of the political problems. Because

of my warm association with the Chairmen of the Lee Foundation and the Shaw Foundation, I was able to establish the Lee Foundation and Shaw Foundation Fellowships in Orthopaedic Surgery which commenced in 1976 and continues to this day. Four young surgeons per year have been to Singapore to train under this programme. We have now trained nearly a hundred surgeons from the ASEAN region in Singapore.

In the twilight years of my life, I look back with satisfaction on the enormous development that has taken place in my specialty in Singapore. At one time, it was considered that to be an orthopaedic surgeon you needed more brawn than brain. I kept telling my colleagues that in orthopaedics thing are done not with Force but with Art — *Non Vis Sed Arte*. The first 3 orthopaedic surgeons of Singapore were indeed strong built guys — "Bull" Fung, "Ruddy" Yeoh and "Kanda" Pillay (the Kanda stick is the strong stick that rests on a manual worker's shoulder and with which weights are carried).

Ladies and Gentleman, I thank you for your patient listening.

*Dr V K Pillay
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