

## Conceptualisation of PGMI and its Activities from 1994 to 2001

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### BACKGROUND

The Singapore General Hospital (SGH) has a long tradition of both a major teaching institution for undergraduate as well as postgraduate medical education. The idea of setting up the SGH Postgraduate Medical Institute (PGMI) was mooted during the 1993 Clinical Heads Retreat. A Planning Committee was established to draw up plans for PGMI, which were subsequently approved by the SGH Medical and Hospital Boards.<sup>1</sup>

PGMI began operations on 2 April 1994. It was officially opened on 28 April 1995 by Dr Kwa Soon Bee, then Permanent Secretary (Health)/Director of Medical Services and Chairman SGH, at its current premises which includes 4 lecture rooms with different seating capacities. One of the lecture rooms is equipped with teleconferencing capabilities. The Education Resource Centre (ERC) is situated on the 8th floor of the same block.

### RATIONALE AND SCOPE OF PGMI'S RESPONSIBILITY

#### 1994

PGMI started out with the objective of bringing the Hospital's teaching resources under one central body to spearhead and provide a coordinated approach for all aspects of postgraduate medical education and training activities undertaken by SGH.

#### 1996

PGMI was re-positioned to become a regional postgraduate training centre in accordance with the government's plan to develop Singapore as a regional hub for medical services. A concept paper was drawn up, approved by SGH management and submitted to the then Minister for Health, BG George Yeo.<sup>2</sup> This concept paper prepared in 1996 serves as the blueprint for PGMI's regionalisation policy.

#### 1997

PGMI was given the task of developing the Hospital's research infrastructure beyond providing research education and administering research grants. This led to the development of the SGH Research Vision, establishment of a research registry, publication of the first SGH Research Directory, protected time from service work to do research, and the establishment of the Clinical Trials Resource Centre.

To encourage medical writing and to enhance medical publishing standards, the SGH-PGMI Press was set up in December 1997.<sup>3</sup>

In response to advances in information technology and communications technology, PGMI began pushing telemedicine as another means for SGH to plug into the global network.<sup>4</sup> PGMI conceived the plan for an audio-visual centre to provide comprehensive educational technology services to support teaching activities. PGMI submitted its space requirements for the Hospital's training facilities to be grouped together and housed at the proposed New Administration Block. The training centre was to comprise the audio-visual centre, library, auditorium, meeting and function rooms and offices of PGMI, Associate Dean's Office, Institute of Advanced Nursing (IAN) and Training Department. These building plans lapsed during the last recession and were reactivated in early 2001.

#### 1998

PGMI was tasked to lead and support the team discussing manpower and productivity for the SGH Management Retreat (January 1998). The team identified the acute shortage of junior doctors at Medical Officer, Registrar and Senior Registrar grades and sounded the alarm that SGH might not train sufficient doctors to meet both corporate and national needs.<sup>5</sup> The team advocated the need for a rational manpower planning programme in the various specialties and subspecialties.

The Faculty of Medicine appointed an Associate Dean in each major teaching hospital. The Hospital decided that the SGH Associate Dean's Office would be responsible for undergraduate and basic postgraduate clinical training up to M Med level while PGMI would take care of advanced trainees up to the level of exit certification and accreditation as a specialist as well as all overseas fellows in SGH.<sup>6</sup>

### **1999**

PGMI was assigned the task of leading and supporting the Workgroup responsible for drawing up the SGH Teaching Strategy 21. The Workgroup, comprising representatives from the medical, nursing and paramedical groups, was unanimous that university affiliation was essential for SGH's future growth and development.<sup>7</sup> The Workgroup also outlined the possibility of establishing SGH as a second medical school by leveraging on its link-up with the Nanyang Technological University (NTU).<sup>7,8</sup>

### **2000**

The Hospital decided that PGMI's responsibility in research be hived off so that it could focus on postgraduate medical teaching. At the same time, the Education Resource Committee came under the direct purview of the PGMI Board.<sup>9</sup>

PGMI decided to branch out into a new area — healthcare management education. The purpose being to provide clinicians with sound management concepts and principles to better manage the resources under their charge and to take advantage of new opportunities in the life sciences industry.

Following the clustering of public hospitals and national centres, PGMI was tasked to lead and support the SingHealth Task Force on Postgraduate Training and Education and subsequently, the SingHealth Standing Committee on Education and Training.

### **2001**

PGMI accreditation protocols were made available to the National Accreditation Board to kick-start national efforts in accrediting clinical departments for training.

In May 2001, the decision was made for PGMI to extend its continuing medical education (CME) support services outside SGH.

In November 2001, PGMI and Corporate Affairs launched an immersion programme for 3M to educate their non-clinicians about hospital management and practices related to their product development and research agenda.

## **ORGANISATIONAL STRUCTURE**

The PGMI Board provides the leadership for PGMI. It comprises senior SGH doctors appointed by the SGH Medical Board. Among its ex-officio members are the Chairman Medical Board (CMB) and Chief Executive Officer (CEO).

To support the PGMI Board, key committees had been formed to develop specific areas related to specialty training, accreditation, continuing medical education, telemedicine, clinical skills training, healthcare management education, external liaison, alumnus, medical publishing and education resource centre.

PGMI taps the expertise in SGH clinical departments and other established institutions for their professional inputs to postgraduate teaching. Since 1995, a full-time secretariat has been employed to provide the necessary administrative support.

## **POSTGRADUATE MEDICAL TRAINING**

### ***Training Prospectus***

By pooling the resources of all SGH clinical departments together, PGMI was able to launch the first edition of the Training Prospectus in May 1995. This edition provided a comprehensive overview of basic and specialty training programmes available in SGH. The second edition was published 3 years later in February 1998 and it included short training programmes developed for doctors who wished to broaden their outlook, update knowledge or learn new skills. In addition to these standard training programmes, requests to customise training were considered to help ensure that SGH training curricula remain relevant to market needs.

### ***Accreditation***

PGMI had put in place a 3-pronged quality assurance programme:

1. Internal audit of SGH clinical departments for their suitability as training departments.
2. ISO-certified process of selection of trainees.
3. Certification of training that allowed PGMI to monitor training and collect feedback from trainees and their supervisors.

PGMI began its accreditation exercise in 1996. Accreditation was planned on a 5-year cycle, with the first cycle being completed at end 2001. The accreditation was done by a Team of Assessors who made their assessment based on written reports

submitted by the clinical departments as well as on-site visits and interviews with the clinical head, teaching faculty and trainees. For validation purposes, an external specialty expert was invited to be part of the Team of Assessors. An evaluation report was then submitted to the Medical Board through the PGMI Board for approval or remedial action.

SGH enjoys the distinction of being the only local hospital to start its own accreditation exercise. PGMI's accreditation protocols had been made available to facilitate the work of the National Accreditation Board. The Board had agreed to accept those departments accredited by PGMI.

### ***Training for Local Needs***

SGH offers numerous training opportunities for both local and foreign doctors. Training positions for local doctors follow national norms and postings are administered at the cluster level.

Local trainees are posted to SGH once every 6 months; in May and November. As at July 2001, there were 173 basic trainees and 114 advanced trainees.

### ***Training for Regional Needs***

If the number of overseas fellows PGMI has attracted is a reflection of how good it is as a postgraduate training centre, then PGMI has indeed grown in stature over the years. A total of 54 overseas doctors from 18 countries undertook postgraduate medical training in SGH in year 2000, compared to 13 doctors from 5 countries when PGMI commenced operations in 1994. The numbers would have been more except that PGMI sets stringent selection standards for all training applications. As a result, of the 37 fellowship applications submitted in 2000 through PGMI to the Singapore Medical Council for temporary registration, none was rejected.

With the establishment of PGMI, overseas doctors who wish to undertake postgraduate training attachments in SGH are provided with a seamless and hassle-free training application process. PGMI helps by liaising with the appropriate clinical departments, Singapore Medical Council and immigration authorities.

Besides processing these training applications, PGMI also managed the SGH Endowment Fund Clinical Fellowships and SGH Research Fund Fellowships, and administered departmental fellowships in conjunction with the respective clinical department.

Three SGH Endowment Fund Clinical Fellowships and three SGH Research Fund Fellowships were offered

in 1997 to doctors (preferably from ASEAN countries) for the first time. These fellowships were tenable for up to 12 months (minimum 6 months) in any SGH department, with the first intake commencing training in 1998. Responses from the region for these fellowships had been overwhelming. For the Endowment Fund Clinical Fellowships commencing in 2002, there were 185 applications from 14 countries.

Some SGH clinical departments had independently sourced for funding to establish their departmental fellowships and these fellowships were administered by PGMI. Examples included the Orthopaedic Fellowship Programme, SGH Research Fellowship in Experimental Surgery and Research Fellowship in Vascular Surgery.

Between 1994 and 2000, a total of 251 overseas doctors from 26 countries had taken up training positions in SGH via the following routes:

1. Fellowships offered by SGH and its Departments.
2. Fellowships administered at government level (e.g. WHO).
3. Fellowships offered by other organisations (e.g. specialist societies).
4. Others (e.g. self-funded).

These trainees were encouraged to maintain their links with SGH through membership in the SGH Alumnus. Some had begun to refer patients here while others had invited SGH doctors to teach in their countries. Indeed, these overseas fellows serve as good ambassadors for SGH and this augurs well for PGMI's role as a regional postgraduate medical training centre and strengthens Singapore's bid to be the regional medical hub.

### ***Monitoring & Certification of Training***

With effect from 1998, logbooks had been issued by PGMI to overseas trainees to track their training progress. These logbooks provided PGMI with feedback from both trainees and their supervisors. Overseas doctors who had successfully complete training in SGH were awarded the PGMI training certificates.

## **CONTINUING MEDICAL EDUCATION**

### ***Monthly CMEs***

Since its inception in 1995, PGMI has been responsible for organising the clinico-pathological conferences and the Hospital-Wide Monthly Clinical Meetings. In the latter series, clinical departments are scheduled to share

current advances in their specialty with colleagues in other specialty areas to foster inter-disciplinary interest and understanding.

The monthly CME calendar of all regular and ad hoc activities organised by SGH and national centres on the Outram Campus, compiled by PGMI, is distributed electronically and posted on the SGH website.

**SGH Annual Scientific Meetings**

PGMI is actively engaged in running CMEs throughout the year. In April 1997, PGMI assumed the responsibility of organising the scientific and social programmes for the Annual Scientific Meeting (ASM) week. This included the SGH Annual Scientific Meeting, SGH Lecture and Formal Dinner, the Annual NTU-SGH Biomedical Engineering Symposium and the Annual SGH Alumnus Golf Competition.

The ASM is a major hospital event that is always very well attended. The 12th SGH ASM held from 27 to 28 April 2001 went very well. Its theme on “Longevity” attracted 170 paper submissions from SGH and institutes within the Outram campus. The Organising Committee had also set aside special slots for participation for the national centres on the Outram campus and also for nurses and paramedical staff. The 4th Annual NTU-SGH Biomedical Engineering Symposium was held on 26 April 2001 and included 2 invited overseas speakers, A/Prof Viola Vogel of the University of Washington and Prof Phyllis Gardner of the Stanford University Hospital. The 9th SGH Lecture, entitled “Between North and South, Between East and West”, was delivered by BG George Yeo, Minister for Trade and Industry at the SGH Formal Dinner on 29 April 2001. Several other pre- and post-satellite meetings were also scheduled with participation from SGH departments, SAF Medical Corps and the local professional bodies (College of Family Physicians (CFPS), Society of Intensive Care Medicine and the Vascular Society). Hospital administrators also got to participate through a course on “Essentials of Healthcare Economics” held from 30 April to 4 May 2001. Training delivery methods varied from didactic lectures, discussions, poster presentations, skills-based workshops and telesurgery conference. The ASM Week is a testimony of SGH’s multi-disciplinary strength, research capabilities and commitment to teach and learn.

**Evidence-Based Medicine Workshops**

In line with national and corporate objectives, PGMI began organising CMEs related to evidence-based medicine (EBM). At the hospital level, workshops had been successfully organised in conjunction with the

Table 1. EBM workshops organised in conjunction with NUS and CTERU.

6-7 June 98	Current Issues in Evidence-based Medicine
10 & 31 October 98	Advanced Evidence-based Medicine
30 & 31 January 99	Current Issues in Evidence-based Medicine
22-23 January 00	EBM in Clinical Research
11-14 January 01	EBM in Healthcare Policy and Management

National University of Singapore (NUS) and the Clinical Trials & Epidemiology Research Unit (Table 1).

The teaching faculty included distinguished overseas experts including Prof Antonio Dans and Chris Silagy. These courses were targetted at local doctors. To complement hospital-wide EBM CMEs, the 3 Divisions had been organising their own EBM-related courses.

Plans were in the pipeline for the SGH Proceedings, an in-house scientific journal, to devote a section on EBM. In addition, a request had been made to the Dean, Faculty of Medicine to incorporate EBM in the Master of Medicine (MMed) programme.

**Clinical Skills Training**

PGMI started the SGH Endoscopy Courses in 1996 in response to a directive to bring all departments engaged in running endoscopy courses under a common umbrella. To differentiate the SGH Endoscopy series from the training programme offered jointly by the Academy of Medicine, Singapore and the Royal College of Surgeons of England, it was decided that SGH Endoscopy courses would focus on advanced endoscopy. To support the teaching requirements, PGMI purchased some endoscopy models and housed them in the Department of Experimental Surgery, Clinical Skills Laboratory.

The first SGH Endoscopy Courses were held successfully from 15 to 23 September 1996 covering courses in bronchoscopy, comprehensive sinus surgery, endourology, knee arthroscopy and nasoendoscopy. This was followed by endoscopic carpal tunnel release and advanced endoscopy in obstetrics and gynaecology in 1997.

Some of these endoscopy courses had evolved into regular series done in partnership between PGMI and the clinical departments and were often over-subscribed by local and overseas participants:

1. Annual Endoscopic Sinus Surgery Courses co-organised with the Department of Otolaryngology. The 5th course, held in March

2000, attracted almost 100 participants from 10 countries including ASEAN nations, UK, USA, New Zealand, Taiwan, India and Kuwait.

2. Annual Vascular Surgery Workshops co-organised with the Vascular Studies Unit. All training places for the 4th Workshop in April 2001 had been taken up.
3. Biannual Instructional Courses on Basic Microsurgery co-organised with the Department of Experimental Surgery. The 11th course was held from 23 to 27 April 2001.

In tandem with current life sciences initiatives, the Department of Experimental Surgery and PGMI launched a symposium cum workshop on "Tissue Engineering and Biomaterials" from 20 to 23 August 2000. The invited faculty included Prof Myron Spector, Director, Orthopaedic Research at Harvard Medical School.

Basic clinical skills training courses were also organised for junior doctors to teach them basic skills in wound closure, suturing techniques, basic bowel anastomosis and laparoscopy. General practitioners (GPs) had also indicated interest to upgrade their surgical skills and responded positively to a GP workshop on skin suturing techniques held by the Department of Plastic Surgery and PGMI in 2000.

PGMI is on the continuous lookout for the use of modern technology to enhance its training infrastructure and proposed the use of **medical simulators** to the Hospital in 1998. Study visits had been made to the Bristol Medical Simulation Center in March 1998, the National University Hospital Medical Simulation Laboratory in April 1999 and the Palo Alto VA Medical Centre in September 1999. Plans to invest in a medical simulator were shelved due to the huge capital investment and lack of economies of scale. Besides medical simulators, the use of virtual reality technology is another possible tool to enhance our training delivery.

### **GP Education**

#### *Partners-in-Care CME*

SGH clinical departments are actively involved in GP education programmes. In 1996, PGMI pooled these resources together and started a GP CME series for family physicians. This has since given way to a new Partners-in-Care Programme. This Programme is a corporate initiative to build more effective relationships with family physicians. These programmes were held on Saturday afternoons at PGMI premises and were well supported by the GPs and sponsors. Average

attendance was 118. Chat sessions with GPs were held in late 2000 to ensure that the CMEs remained relevant.

With the set up of the SingHealth GP Empowerment Programme, PGMI expected to refine its GP educational programmes to align with cluster and SGH corporate goals. SingHealth had committed to collaborate with CFPS to run modular CMEs for GPs and PGMI would play a role in delivering this commitment.

#### *Annual Endocrinology Update*

The Department of Endocrinology runs its Annual Endocrinology Update with PGMI. This programme provides family physicians with up-to-date information and discussions on the various issues in endocrinology. Based on the positive feedback received, the Department of Endocrinology and PGMI organised the 5th Update on 22 September 2001.

#### *Other GP Updates*

To supplement these intra-disciplinary GP CMEs, PGMI also organised multi-disciplinary GP Updates. The following were organised between 1999 and 2000:

1. Management of Common Infections.
2. Recognition & Management of Unusual Infections from the Community.
3. Update on Management of Hypertension & Hyperlipidemia.
4. Update on Infectious Diseases.

Plans to organise more multi-disciplinary GP Updates were put on hold pending discussions with SingHealth GPEP on areas of collaboration.

#### *CMEs Related to Law and Innovation*

In line with the spirit of fostering **medical research, innovation and entrepreneurship**, PGMI organised the following programmes:

1. Copyright and Patent Issues (January 1998).
2. Intellectual Property Rights and the Protection of Innovations in Medical Research (January 2000).
3. Medical Technopreneurship (July 2000).
4. Life Sciences in the NUS Faculty of Medicine (February 2001).

Lectures directed at avoiding medical errors and reducing risk of litigation were also organised:

1. Medical Records and Evidence (January 1998).

2. Medical Device Accidents (November 1999).

The Singapore Medical Association had approached SGH to collaborate on running a CME series on Law and Ethics for Specialists Groups. This series was scheduled to start in PGMI in 2002.

**Singapore Exhibition and Convention Bureau**

PGMI facilitated a presentation by the Singapore Exhibition and Convention Bureau (SECB) on 27 August 1998 to inform SGH staff of how SECB can help them bid, market, promote and service conventions, international scientific meetings and trade exhibitions in Singapore. A second presentation was organised on 9 February 2001.

**Professional Convention Services**

PGMI's convention secretariat unit was set up primarily to support CMEs organised by SGH and its departments. Since its establishment, PGMI had occasionally received requests from SGH doctors to help support meetings organised by professional societies of which they are members. In 2001, the PGMI Board, with the support of the CMB and CEO, decided to pilot plans of extending PGMI's convention secretariat services beyond SGH.<sup>10</sup> PGMI's CME support services would be marketed in conjunction with its telemedicine capabilities and medical publishing services. The same year, PGMI was chosen over other vendors to be the organising secretariat for the ASEAN Federation of Endocrine Societies/Asia-Oceania Thyroid Association (2003) Meeting.

**BIOMEDICAL ENGINEERING EDUCATION**

Biomedical engineering provides a fertile ground for exploration into the life sciences. On 18 January 1997, SGH signed a Memorandum of Understanding (MOU) with NTU to conduct joint research and development projects. The partnership between SGH clinicians and NTU engineers led to multiple joint research projects and biomedical engineering education programmes.<sup>11</sup> By end 2000, a total of 7 research projects were completed while 36 were in varying stages of development.

Significant milestones in the NTU-SGH collaboration in biomedical engineering education included:

1. The launch of a part-time **MSc (Biomedical Engineering)** Course in July 2000. Of the 138 applicants, 50 were offered a place and of these, 43 accepted. This was almost twice the class size anticipated. A full-time course commenced in July 2001. Response to this course continued to be positive.

2. The launch of the **Annual NTU-SGH Biomedical Engineering Symposium** in 1998 to showcase joint research projects done by SGH and NTU researchers. It had since grown from a half-day symposium in 1998 to a full-day programme with a poster session in 2000.
3. The launch of a 7-module **Orthopaedic Biomechanics Course** in September 1999. This course was targeted primarily at Advanced Trainees in Orthopaedic Surgery and was conducted in collaboration with NUS. Five modules had been completed by end 2001.
4. Short courses/talks such as:
  - i) Biomechanics: A Surgical Perspective (19 to 20 August 1998).
  - ii) Biomedical Engineering in Medical Education (18 November 1998).

**HEALTHCARE MANAGEMENT EDUCATION**

**Rationale**

The SGH-PGMI Healthcare Management Development Programme is an initiative which PGMI embarked on in 2000 to coincide with current thinking for physician-driven leadership, implementing casemix, new opportunities created by the life sciences industry and competing in a knowledge-based economy.<sup>12</sup> These environmental changes dictate the need for physicians to be equipped with new skills, such as strategic planning skills, some understanding in health economics and financing, innovation and knowledge management.

Through this series and the co-operation with established public policy and business schools, SGH-PGMI hopes to give clinicians and healthcare professionals a good grasp of management principles and concepts that they can apply to yield quality care at lower costs.

**Pilot Programme**

The pilot course — The Economics & Management of Health Care — was co-organised with the NUS Business School from 23 to 24 February 2000. It was intended as a 2-day course for a wide spectrum of doctors, nurses and others in the healthcare industry. The response was overwhelming and PGMI had to run a second course concurrently to meet the pent-up demand.

### ***NUS Public Policy Programme***

Encouraged by the response, PGMI began planning a more structured programme on Healthcare Economics targeted at the specific niche of senior clinicians and healthcare professionals involved in policy planning. This time, PGMI linked up with the NUS Public Policy Programme to offer an intensive 5-day programme entitled “Essentials of Healthcare Economics” from 30 April to 4 May 2001. All 40 places were snapped up while 19 were wait listed. A repeat course was held from 10 to 14 December 2001.

### ***NUS Business School***

In response to the Government’s direction to use the Net Economic Value framework for facilitating value creation throughout the public sector, PGMI has launched a new 2-day course on “Core Financial Concepts” held from 5 to 6 October 2001. This was organised in collaboration with the NUS Business School. More programmes covering various aspects of healthcare management were being planned with the NUS Business School.

### ***NTU***

The NTU Faculty of Engineering had invited PGMI to collaborate with them to launch a MSc (Healthcare Engineering & Business Administration). PGMI had given its feedback on the proposed MSc course curriculum. PGMI had also agreed to be a nominal sponsor for NTU’s proposed executive programme on “Managing the Healthcare Organisation in Times of Turbulence”.

### ***Others***

PGMI cast its nets wide for established content providers and potential consumers. Contact had been made with INSEAD, the University of Chicago Graduate School of Business, Ramathibodi Hospital, Thailand and the Sirindon College of Public Health, Trang, Thailand. Meetings with the Singapore Management University-Wharton and the Singapore Institute of Management were in the pipeline.

In publicising its healthcare management courses, PGMI’s traditional CME mailing database was expanded to include a wider target audience as it was believed that these programmes would be enriched by the participation of various stakeholders in the healthcare industry (i.e. practising physicians, administrators, regulators, suppliers, overseas participants).

## **TELEMEDICINE**

### ***Commitment to Telemedicine Initiative***

The SGH Department of Diagnostic Radiology was one of the early adopters of telemedicine. Beginning in 1995, the radiologists had collaborated with their counterparts at Stanford University Hospital to run a teleradiology programme. In 1997, PGMI began to push for the use of telemedicine because it believed that advances in IT and communications technology would inevitably influence the development of medicine, especially in the area of postgraduate medical education. It was an uphill task changing the mindset of clinicians and administrators, but good progress had been made. Two teleconferences were held in 1995, increasing to 8 in 1997 and 15 by end of 2000. PGMI had multi-point transmission capability, including telecasting surgical operations live. The lead-time for the technical team to support each event had also shortened.

Some highlights of regular telemedicine events are:

### ***EuroTransMed Foundation***

This CME series, owned by the EuroTransMed Foundation, was transmitted via satellite from London to 200 receiving sites. Receiving sites interacted via phone, fax or videoconference link. PGMI had participated in 6 interactive broadcasts until May 2001 when the EuroTransMed Foundation decided to stop their CME satellite broadcasts temporarily for financial reasons.

### ***University of California San Francisco (UCSF)/ Stanford Remote Global Medical Forum***

This CME series, transmitted via ISDN lines, started as a 3-way development project involving UCSF/Stanford University Hospital, PGMI and Makati Medical Centre (Manila). In early 2001, the Chinese University of Hong Kong (CUHK) joined in this Forum. A different topic was presented every month from the USA, followed by Q&A with the Asian sites. The programme was structured to keep it as interactive as possible.

### ***SGH-Mayo Clinic Hand Surgery Teleconferences***

The SGH Hand Surgeons organised an annual Hand Surgery Teleconference with their counterparts in Mayo Clinic. Cases related to Brachial Plexus Injuries and Replantation were presented for discussion. Mayo Clinic had expressed an interest to run these teleconferences on a quarterly interval.

### ***Neurosurgery Teleconferences***

The SGH Department of Neurosurgery and their counterparts at CUHK invited institutions, such as Beth Israel, Perth, Fujita Health University, to join in their neurosurgery teleconferences. This grew from 1 session in 1999 to 3 in 2000. On 26 August 2000, the International Symposium on Parkinson's Disease was significant in that it marked the first time SGH transmitted its computerised surgical planning system out of SGH and also provided the bridging services for the 3-way transmission. Fujita Health University had expressed interest to hold regular teleconferences with SGH and CUHK and expand the programme's scope to include other clinical specialties.

### ***Telesurgery Conferences on Stapled Haemorrhoidectomy***

PGMI collaborated with the Department of Colorectal Surgery to successfully transmit SGH's first telesurgery session to Korea using ISDN lines on 16 February 2001, which was done within a week's notice. Since then, 5 more sessions on stapled haemorrhoidectomy had been conducted with multi-site participation. The teleconference on 1 May 2001 was transmitted to a record 14 sites worldwide. Doctors at the remote sites had the opportunity to watch the operation live and to interact with the SGH colorectal surgeons. The programme's sponsor, Johnson & Johnson Ethicon, had hoped to run this series on a monthly basis and had informally indicated their interest to apply this model to facilitate distance learning in other specialty areas. PGMI viewed this as an excellent means for SGH surgeons to showcase their skills to a wider overseas audience.

### ***Other Outcomes from Telemedicine Initiative***

PGMI's track record in telemedicine had attracted other CME providers to buy its services. It also led to the interest by the Asian Development Bank (Manila) to purchase teleconsultation services from SGH. Successful trial runs with the Attorney General's Office (Singapore) showed that these might facilitate participation in court trials in future. Telemedicine equipment was also available in the Departments of Obstetrics and Gynaecology, Diagnostic Radiology and Pathology.

### ***Telemedicine and E-Learning Model***

PGMI would continue to work on greater acceptance of telemedicine as an alternative tool for delivery of postgraduate medical education within SGH, SingHealth, with other local and overseas institutions. One short-term goal was to develop and run its own Asian Remote Global Medical Forum.

PGMI had also studied the feasibility of e-learning.

## **EXTERNAL LIAISON**

### ***Established Network***

SGH has built a strong network with other reputable institutions and their key officers. Some of these linkages have led to both parties signing an MOU or Letter of Intent to pledge their collaboration in very broad terms. The list of affiliations included:

1. Adelaide Children's Hospital and Royal Adelaide Hospital, Australia.
2. Affiliated Hospital of Ningxia Medical College, China.
3. AO International, Davos, Switzerland.
4. Dept of Emergency Medicine, University of Cincinnati Medical Centre, USA.
5. Fatmawati General Hospital, Jakarta, Indonesia.
6. Chang Gung Memorial Hospital, Taiwan.
7. Institute of O& G, Hammersmith Hospital, London, UK.
8. Nanyang Technological University, Singapore.
9. College of Physicians and Surgeons of Pakistan.
10. Peking University First Hospital, China.
11. Royal Melbourne Hospital, Victoria, Australia.
12. Stanford University Hospital, California, USA.

There were other proposals to formalise linkages through an MOU. These included linkages with MD Anderson Center, Kantonsspital Basel, University of Washington, the Zentrum fur Molekulare Neurobiologie Hamburg and Fu Xing Hospital.

PGMI functioned as the coordinating body for the above MOUs. It was responsible for vetting MOU proposals and recommending them to Medical Board for decision. It updated its MOU registry regularly and also sourced for potential affiliations based on feedback from staff who had undergone training overseas.

### ***Highlight of Some Joint Activities***

The MOUs paved the way for a number of joint activities. For example:

1. Collaboration with **NTU** on biomedical engineering research and education as outlined earlier. SGH-PGMI served as a valuable resource

for the Life Sciences Task Force appointed by the Government to study how NTU could capitalise on life sciences. Socially, the first Golf Competition between NTU and SGH was held on 18 April 2001 at Sentosa.

- Annual Joint Updates with **Stanford University Hospital** had been organised successfully over the last 6 years. The 7th Joint Update in 2000 on “Medical Education in the 21st Century” generated a lively discussion among clinicians, educators and decision makers. The 8th Joint Update, held from 17 to 18 August 2001, focused on “Sleep Disorders”. SGH and Stanford had an ongoing telemedicine, namely, the UCSF Stanford Remote Global Medical Forum. The joint Teleradiology Programme had ended earlier.

## SGH ALUMNUS

### *Role and Activities*

The SGH Alumnus was launched in May 1996. The Alumnus serves as a platform for doctors who have worked or trained in SGH to maintain their links with the Hospital. Alumni are invited to participate in the Hospital’s academic, professional and social activities. One of the highlights in the calendar of activities was the inaugural Golf Tournament held on 22 April 1998. This has since become an annual event, coinciding with the SGH ASM.

## EDUCATION RESOURCE CENTRE

The ERC offers library facilities, photography, slide production services. It inherited an invaluable collection of journals from the defunct Postgraduate Medical Library. The SingHealth Online Library was introduced in late 2000 through the SingHealth Research Committee and in collaboration with librarians from different national centres and hospitals. This made available Ovid and 59 full-text journals to the existing resources of Medline and 142 journal subscriptions. ERC is also exploring the use of the digital video and web/virtual network to better support teaching activities. To upgrade the standards of presentations at scientific meetings, the ERC held talks on “Multimedia Presentation Skills” and “Better Skills in Poster Presentation”.

To have an overview of the resources available at hospital and department level, ERC compiled a list of all journals available in SGH. Another list containing books was compiled. The purpose was to better coordinate the resources hospital-wide to avoid duplications and share resources. Some budget had

been allocated to ERC to automate the updating of this registry and to share the information compiled. ERC had evaluated 3 library automation systems but had deferred its decision pending SingHealth’s decision on a common library system at cluster level.

In July 2001, ERC Current Awareness Service launched the Electronic Table of Contents service to keep staff posted on current articles contained in each new issue of 138 medical journals and 38 management journals.

## MEDICAL PUBLISHING

### *SGH-PGMI Press*

To enhance medical publishing standards, the SGH-PGMI Press was set up in December 1997 to provide pre-press services for the SGH Proceedings, handbooks, proceedings of meetings, training prospectus, patient education and other healthcare related materials.

### *SGH Proceedings*

The SGH Proceedings has grown from a publication containing articles of general interest and protocols of case conferences in 1992 to an in-house scientific and peer-reviewed journal. The number of issues grew from 2 in 1994 to 3 in 1995 and 4 in 1998. The SGH Proceedings is supported mainly by contributions from SGH and the medical community on the Outram campus. Readership exceeds 2000 and includes overseas medical institutions. The SGH Proceedings is working towards being an indexed journal and it is encouraging to know that the Singapore Medical Council already recognises the SGH Proceedings as being on par with other local indexed journals — the Annals, Academy of Medicine, Singapore and the Singapore Medical Journal.

### *Book on “A Clinical Approach to Medicine”*

To leverage on the distribution network and larger production capacity of commercial publishers, PGMI Press signed an MOU with World Scientific Publishing Company. The Division of Medicine Book on “A Clinical Approach to Medicine” was the first book agreement under this MOU between PGMI Press and World Scientific. Under the agreement, PGMI Press copyedited, proofread and coordinated the production of all 54 chapters of the book. This book is a collection of the experience of local doctors. It was published and launched in early 2001. Encouraged by the response, World Scientific Publishing approached PGMI to consider co-publishing more books, possibly in orthopaedics and surgery in general. The Division of Surgery was invited to consider it seriously.

### ***Book on Medical Conventions***

The SECB had approached PGMI to co-publish a book aimed at promoting Singapore's profile as a medical conventions city. The book was scheduled to be published in 2002.

### **CONCLUSION**

This report highlights SGH and PGMI's contributions to medical education from 1994 to 2001 and underlines the greater role SGH can play within the SingHealth cluster and in the proposed Second Medical School.

PGMI will need the continued support of the hospital's management and the participation of all clinical and support departments to realise its vision of becoming a major regional postgraduate training centre.

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