Review of Surgical Education and Training in Thailand

DRAFT

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PREAMBLE

The Royal College of Surgeons of Thailand (RCST) is responsible for the training and qualification of surgeons under the authority of the Medical Council of Thailand. The RCST established a review of general surgical training with the aim of improving recruitment and the quality of training and specialist practice to better serve the people of Thailand.

The Council of the RCST through the President Professor Lt General Nopadol Wora-Urai invited Professor Ian Gough immediate Past President of the Royal Australasian College of Surgeons (RACS) and Professor John Collins former Dean of Education at the RACS to lead a review of general surgery training. Other specialty training programs were included to assist in the understanding of their programs and how they interact with general surgery. Professors Gough and Collins were accompanied on all site visits by Professor Lt General Nopadol Wora-Urai and also at different times by members of the Education Committee and Council of the RCST.

The draft report was discussed at a meeting with surgeons in Bangkok that included video linkage to Chiang Mai, Khonkaen and Songkla. Following this feedback a final report was prepared. This report will be for the use of the RCST and will not be confidential. It will be used to advocate for changes that should lead to an increased recruitment of residents wishing to train particularly in general surgery, improvements in surgical training and workforce and ultimately in improved patient care.

The purpose of this review is to assess the strengths and weaknesses of the current program and to provide practical advice on how to “FIND A BETTER WAY”.

TERMS OF REFERENCE

1. To review the objectives of the program and whether these are clear to all surgeons and residents.

2 To consider the current and future surgical workforce requirements and the factors impacting on recruitment.

3. To review the current arrangements for allocating residents to posts, the length and relevance of rotations, the interactions with other specialty training programs and the tension between service and training

4. To review working hours and quality of life of residents.

5. To review selection, the curriculum and in-training assessment and final assessment.

6. To review the strengths and weaknesses of inspected programs.

7. To advise whether the current requirements for Continuing Professional Development (CPD) ensure that surgeons will remain up to date and competent throughout their professional lives.

8. To consider the role of the RCST in governance and in establishing and implementing uniform standards to guide selection, the curriculum, in-training assessment and final assessment.

PROCESS OF THE REVIEW

The review took place between the 19th and 27th of July 2011 and followed a full day seminar on surgical education held at the RCST Annual Scientific Congress.. The Review Committee comprised Ian Gough, John Collins, Nopadol Wora-Urai, Vajarabhongsa Buhudhisawasdi, Darin Lohsiriwat, Supakorn Rojananin, Wichai Vassanasiri, Pornchai O-Charoenrat, and Cherdsak Iramanwerat.

On site visits were conducted at Ramathibodi Hospital (general surgery and plastic surgery), Phramongkutklao Hospital (general surgery), Rajavithi Hospital (general surgery), Chulalongkorn Memorial Hospitaj (general surgery and neurosurgery), Chiang Mai University Hospital (general surgery and neurology), Khonkaen University Hospital (general surgery), Khonkaen Hospital (general surgery and regional trauma centre), Siriraj Hospital (general surgery and cardiovascular and thoracic surgery).

At each hospital the review team met with surgical staff including attending surgeons, residents and medical students. Professors Gough and Collins met privately with the residents and the students and provided feedback to the surgical staff on the perceived strengths and weaknesses of the local program.

The draft report was discussed in detail at a half-day meeting at the RCST and following feedback a final report was prepared.

FINDINGS OF THE REVIEW

1. Objectives of the program

The objectives of the program are appropriate and comprehensive. .However, to achieve these objectives the occupational roles of general surgeons in Thailand must first be identified followed by establishing the key technical and non-technical competencies which underpin each of these roles. A curriculum should be developed based on these competencies (competency-based curriculum) which will guide what is taught, learned and assessed. It is questionable whether a program based on time and numbers of cases can guarantee that the objectives will be met[1].For example 400 operations are required to complete training in general surgery but more focus is needed on whether residents can satisfactorily perform core or index procedures.

2. Workforce requirements and recruitment

The review team was made aware of surgical workforce deficiencies particularly in general surgery at consultant and resident levels, especially in regions outside Bangkok. In addition the scope of practice or pattern of work has changed for general surgeons due to the availability of subspecialties and the impact of concerns about litigation.

In 2011, 108 out of the available 120 posts have been occupied by Year 1 residents (Table 1). However, this is an exception and in recent years about 30% have remained unfilled particularly in areas outside Bangkok.

At each of the sites visited, we interviewed final year medical students and they are either satisfied or very satisfied with their surgical teaching and experience in their respective medical schools. They report that the surgeons who teach them are good role models. They would like more hands on experience such as being a first assistant if possible. Importantly, very few students wish to consider surgery as a career option. There were three consistent reasons given by the students for this:

- Excessive workload for residents with long working hours and years of training compared to other specialties.
- Inadequate rewards for the workload and responsibilities associated with being a surgeon.
- Increasing concerns about litigation.

3. Allocation of trainees, length and relevance of rotations

The first year of residents' training requires them to rotate including 2 months in general surgery, 2 months in trauma and 8 one-month rotations in other specialties (ref page 6 of the RCST curriculum). Our understanding is that residents in all

specialties undertake similar one month rotations in their first year of training. This is based on history and tradition and when we asked surgeons to identify the reasons for these frequent rotations and what competencies they expected the residents to learn,, they seemed unclear. The requirement for monthly rotations interferes with the important rotations through general surgery as they are very short and involve frequent changes in at least some of the programs. The requirement of specialties to include several years of training in general surgery and other unrelated specialties is of questionable relevance; it adds to the years of training and the competencies that are expected could be delivered in other ways such as in skills courses and targeted clinical experiences[1].

Short rotations of one month may not allow enough time for the expected competencies in relevant procedures to be mastered and may not allow sufficient time for attending surgeons to validly assess the performance and progress of the resident. Consideration should be given to changing the specialty rotations to a minimum of 2 months. It is important that the total length of training is not increased so it might be advisable to define the specialist rotations that are essential and offer others as electives; some would necessarily be dropped.

It is possible that these rotations are not delivering the experiences necessary to produce general surgical specialists nor are they meeting the learning objectives they were intended to deliver. This concern would also apply to other specialties that require similar rotations through multiple specialties. We were informed that in the past some of the rotations through multiple specialties were to fill service needs but that this is no longer the case. Much of the experience is as an observer and is reducing the opportunities for training that are more relevant to the specialty. It is recommended that all the specialty training boards meet to consider exactly what is expected for training from these rotations and whether some could be omitted. Other Colleges including the RACS have had to work through similar discussions in order to ensure residents receive the most relevant experience and learning.

4. Working hours and quality of life of trainees

There is a strong perception and evidence that trainees work very long hours leaving inadequate time for study, rest and their personal activities. Very few residents marry or have children until after completing training. While there are reasonable numbers of female trainees and no evidence that females are discriminated against in selection, many told us that they had been advised against a surgical career because of the workload demands and the difficulties it would cause with family life. Formal allowance of interrupted training would be helpful to both female and male trainees.

The practice of all four residents of a team being on call simultaneously may not be necessary to ensure safe patient care. Furthermore this duplication may not be necessary for their clinical experience and the resulting fatigue impairs learning. The workplace rostering of residents in the same place at the same time such as in the operating theatre creates tension and competition for hands-on operating experience and may lead to inadequate cover in other areas of the surgical service. Final year medical students or Externs told the review team that all residents are in the theatre at the same time leading to their inadequate supervision in the wards and

emergency departments. Residents also informed us they were concerned that their fatigue was affecting patient safety[2,3]. When rosters are adjusted to avoid unnecessary duplication it will reduce the tension between service and training and both will actually improve.

5. Selection, the curriculum, in-training assessment and final assessment

The purpose of selection is to ensure that the best applicants with the greatest potential to become good surgeons are selected. It is important that the processes and criteria used for selection are fair and transparent[4]. We have observed some differences in how how residents are being selected and appointed at different program sites. One of the program sites visited by the review team has begun to develop standardised guidelines on selection. This should be explored more widely and include the development of structured forms for the completion and scoring of referees' reports and the curriculum vitae. Adopting a semi-structured format for the interview with standardisation of the process and scoring will increase validity and reliability. During the discussion on the draft report at RCST there was unanimous support for the development and implementation of selection along these lines while ensuring it was appropriate for Thailand. .

The current curriculum is broad but it would benefit by identifying the essential roles of a surgeon (core competencies) that the program is wishing to prepare surgeons for. The curriculum should then be developed around these core competencies. These will include knowledge, attitudes and both technical and non-technical skills. Examples of such competencies include those developed by the RACS[5] and the ACGME[6]. These could be adapted for local use. These competencies will help guide improvements in the curriculum including selection and assessment at every stage.

There are two types of assessment - called formative and summative. Formative assessment takes place on-the-job during everyday training and is to help learning whereas summative is assessment of what has been learned by the completion of training. Formative assessment should be frequent, face-to-face and accompanied by constructive and timely feedback. It should not focus only on knowledge nor be given only to those who have a problem. Positive feedback is vital for all learners. Tools for in-training assessment include Direct Observation of Procedural Skills or Procedure Based Assessment; Case-Based Discussion; the mini-CEX and 360 degree or Peer Assessment[7].In Procedure Based Assessment, an operation can be deconstructed into its component parts and these assessed as part of training using global assessment and followed by immediate and constructive feedback.

We have observed an emphasis on knowledge-based examinations mainly through the use of MCQs as the current method of assessing progress during training. This method does not adequately assess the other core competencies which a trainee must develop during each stage of their training and learning. There are forms available to help with these in-training assessments and their use by surgeons is greatly helped by providing them with appropriate training courses[8,9]. Although this might appear more demanding of surgeons' time, the reduction in the time currently being devoted to preparing and organising MCQ examinations will more than compensate for this.

Identification of the poorly performing resident is made easier by using the wide ranging in-training assessment as described above. It enables specific deficiencies to be identified and an agreed plan of action to be instituted to improve the resident's performance. Natural justice requires that a resident being considered for dismissal is first given written notification and an opportunity to improve in the areas of deficiency which has been identified.

Obtaining feedback from residents is an important part of improving training. To be successful this must be anonymous and sent to a central committee of the RCST rather than considered locally. It is the experience of the RACS that residents are reluctant to provide feedback. Identifying residents with leadership qualities and providing them with encouragement and support helps to gain their trust and obtain feedback.

A comprehensive training program with valid and reliable in-training assessment should ensure every resident is able to pass the final examination. Each Training Board must ensure that individual resident's performance (based on in-training assessment) is satisfactory and that they are adequately prepared and ready to sit the final examination and, if successful, ready to be a competent surgeon.

The purpose of the final examination should be clearly defined and communicated to all trainees and their teachers. Consideration should be given as to whether there are elements of the curriculum in which the resident has already demonstrated competence during in-training assessment and therefore does not need to be re-examined in these areas in the final examination. For example, skills in the essential operative procedures should have been assessed and recorded as satisfactory by supervisors of in-training assessment. Operative surgery in the final examination could then focus on problem solving, clinical reasoning, mature judgement and decision making and the peri-operative care of the patient.

6. Strengths and weaknesses of inspected program sites

Surgeons at each program site work hard to ensure each resident receives adequate teaching and a broad clinical outpatient, ward and operative experience. A large number of educational sessions are offered and most surgeons are willing to assist the resident during operative procedures and other clinical work.

The overall quality of individual programs is satisfactory. However, there are significant differences particularly between the Bangkok University Hospitals and Government Provincial Hospitals. Some have well developed teaching programs and provide a broad clinical experience while others focus primarily on clinical experience. The case-mix and competition for operative experience impacts on the training experience even in the Bangkok University Hospitals.

A number of Attending Surgeons and residents commented that the program would be improved by longer rotations as are already offered by some programs. Residents informed the review team they would like the opportunity to rotate to other centers including between the provinces and large cities and from Bangkok to the provinces.

Such exchanges would broaden trainees' experience, expose them to new environments and may help to improve recruitment to the provinces. The formation of such networks should involve the transfer of residents in both directions and be accompanied by their salaries. This transfer will help to ensure these residents will become part of the team at the hospital to which they rotate thus ensuring a worthwhile experience and learning opportunity.

On the grounds of ensuring equity and quality of the overall experience for residents, consideration should be given to establishing networks comprised of two or three hospitals in order to balance the strengths and weaknesses of individual programs.

7. Continuing Professional Development (CPD)

The purpose of CPD is to ensure the quality and safety of patient care. In the rapidly changing world of medicine and surgery it is essential that surgeons keep up-to-date throughout their professional lives. They are expected to demonstrate continuing good behaviour and competence[10]. This means that learning does not end at the time of the final examination but continues as life-long learning. While the RCST and some specialty groups provide scientific meetings and courses, there is no requirement to attend. CPD is more than Continuing Medical Education (CME). CPD includes all of the essential roles of a surgeon including self-audit of performance, professionalism, leadership and others.

In an increasing number of countries, society and medical regulatory authorities require evidence of ongoing participation in CPD in order to continue in practice. In addition, hospitals are requiring surgeons to provide evidence of participation in CPD in their scope of practice as a condition of working in the hospital. Medical Indemnity Organisations increasingly require CPD. The RACS has decided not to use formal examinations to ensure its Fellows remain up-to-date and competent. Points are given based on wide ranging and flexible options which enables most surgeons to meet the requirements through their daily work and ongoing educational activities.

8. Governance and the role of the RCST

Training may be governed under several possible models with roles for government, universities and hospitals. In Thailand, the RCST is currently responsible for accreditation of programs, the curriculum, basic science examinations and the final qualifying examination. The RCST has developed an electronic log book and the review team examined these and found this innovation to be very impressive. The logbook content requires verification by the Attending Surgeons in each program to ensure its reliability. The data available from these logbooks could be used to identify the case mix available at each rotation resulting in a better understanding of overall training. This data could be also be used in re-accreditation reviews and to guide efficient training rotations within networked hospitals.

At every site visit, the surgeons interviewed hold the RCST in high esteem and indicated they would welcome guidance from the RCST on how to improve selection and in-training assessment. They would be keen to engage with the RCST in the development and implementation of standardised methods and forms that might help

to achieve this. The review team would like to encourage this development as it will achieve fairness, transparency and comply with the requirements of natural justice.

The RCST might also consider an expanded role in the areas of advocacy and leadership relating to the care of surgical patients in Thailand. This might be in association with other medical groups and could include engagement with government, NGOs and the media particularly regarding the difficult medico-legal environment we were informed about during visits to program sites..

RECOMMENDATIONS

1. The RCST continues to govern surgical training and qualification and establishes uniform guidelines for selection and in-training assessment.

2. The curriculum is reviewed to ensure that the competencies - including core procedural competencies - required at each level of training and at the completion of training - are achieved.

3. The purpose and value of short rotations in multiple specialties should be reviewed to:
    - Identify the learning experiences and core competencies which each rotation is intended to achieve.
    - Examine whether these learning experiences and competencies are actually being achieved.
    - Consider whether some rotations could be omitted.
    - Establish whether those rotations which are essential should be for a minimum period of 2 months.
    - Include discussions with other specialty training boards.

4. Networks between hospitals should be established to provide a more balanced and comprehensive learning experience and to possibly assist in workforce distribution after the completion of training.

5. Workplace rostering should be reviewed to reduce unnecessary duplication that is not necessary to provide safe patient care and that causes fatigue and interferes with learning. In addition rostering for the operating room should avoid having all residents present and ensure supervision for Externs working in the hospital.

6. In-training assessment should focus on each of the technical and non-technical competencies considered important by the RCST, and, be performed regularly, face-to-face and include constructive and timely feedback for every resident.

7. A training course should be developed to enable surgeons to carry out selection and in-training assessment according to RCST standards.

8. The RCST considers developing guidelines for CPD that are appropriate for the maintenance of safety and the quality of care of surgical patients.

9. Workforce recruitment issues are addressed by considering solutions to:

    - Workload and working hours
    - Remuneration proportional to responsibilities
    - Legal concerns

10. The aims and methodology of the final examination are reviewed.

Table1

General Surgery accredited posts and occupancy (first year residents 2011).

Region	Hospital program	Posts available	Posts occupied
Bangkok/Central	Siriraj	15	15
70 (67)	Chulalakorn	9	9
	Ramathibodi	8	8
	Thammasart	2	2
	Vichira	5	5
	Phramongkuthlao	8	7
	Pinklao	2	2
	Bhumipol	5	4
	Police	4	3
	Rajavithi	8	8
	Lerdsin	4	4
Northern	Chiangmai	12	12
12(11)			
Northeastern	Khonkaen University	9	8
20(14)	Khonkaen hospital	2	2
	Maharaj	6	3
	Samprasit-Prasong	3	1
Eastern	Cholburi	4	3
6(3)	Phrapokklao	2	0
Southern	Songkla	10	10
12(12)	Hadyai	2	2

Total 120 with 108 occupied.

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