

SEAADE

**Faculty of Dentistry
MAHIDOL UNIVERSITY**

SEAADE

**SEAADE PEER REVIEW
AND CONSULTATION VISITATION**

AUGUST 5th To 8th, 2007

SEAADE Peer Review and Consultation Programme
Review of Faculty of Dentistry, Mahidol University
Bangkok - August 5th to 8th, 2007.

Report to Dean Dr Theeralaksna Suddhasthira, Dean, Faculty of Dentistry.

1. Introduction

The SEAADE Peer Review Visit took place from August 5th to 8th, 2007 at the Faculty of Dentistry premises at the Phayathai Campus and Salaya Campus both of which are in the city of Bangkok. The Faculty initiated the Visit by sending a formal request to the Chairman of the SEAADE Peer Review and Consultation Committee. Subsequently they submitted a completed SEAADE Visitation Self-Assessment Document for the Reviewers, so it arrived a few weeks before the Visit by the arrangement of the International Relations Unit of the Faculty.

The Reviewers on this occasion were from the SEAADE Visitations Panel as follows:

- Professor Toh Chooi Gait – University of Malaya, Malaysia (Chairperson)
- Professor Lakshman Samaranyake – University of Hong Kong, Hong Kong
- Professor Grace Ong Hui Lian– National University of Singapore, Singapore
- Professor F. C. Smales – AIMST University, Malaysia. (Rapporteur)

The Visit followed a pre-agreed intensive programme, including inspection of facilities, meetings with staff and students, and observation of clinical teaching sessions as well as the reviewing of a wide variety of supporting documents. There were formal presentations by the Dean and her colleagues on behalf of the University and the Faculty, and by the Reviewers. The Panel held several private meetings with various staff and student groups during the Visit to discuss in detail particular aspects of the undergraduate and postgraduate programmes for the final Report.

At the conclusion of the Visit, the Chairman of the Panel verbally presented an outline of the Report to the Dean and members of the Faculty of Dentistry followed by a short discussion. Subsequently the Dean received a written version of the Report for factual correction and then acceptance. The Dean has the option to have the Report presented in whole or part on the Official Website of SEAADE.

2. Acknowledgement

The SEAADE Peer Review and Consultation Programme Reviewers wish to extend their sincere thanks and appreciation to Dean Dr Theeralaksna Suddhasthira together with all her colleagues for the meticulous organization and warm hospitality they experienced during their visit to Bangkok.

3. Thailand and its Oral Health Needs

3.1. Thailand

The Kingdom of Thailand is located centrally in South East Asia. To its east are Laos and Cambodia, to the south are the Gulf of Thailand and Malaysia, while to the west are the Andaman Sea and Myanmar. The King of Thailand is H. M. King Bhumibol Adulyadej. The population of Thailand is estimated at 65.5 million. It is composed of Thais – 75%, Chinese – 14% and others – 11%. The male: female ratio is 97: 100 with literacy figures for men being 96% and women, 91.6%. The major religion is Buddhism with Islam, Christianity and Hinduism also practiced. The National Language is Thai with English being widely spoken, particularly in cities.

3.2 Oral Health Needs of the Country

For several years, Thailand has adopted sophisticated approaches to planning oral healthcare and creating the dental work force required to meet global oral health targets in that country. However, dental need in Thailand remains high, particularly in areas remote from the capital city of Bangkok. Examples are countrywide caries prevalence's of 57.3% in 12 year olds and 85.6% in the 35-44 age group. Also 85.4% of 15 year olds have gingivitis, and only 51% of the 60-74 age group have 20 or more functioning teeth. A 2001 National Oral Health Survey showed utilization of services to be only 28%, primarily driven by dental and other oral disease symptoms rather than a desire for maintenance of a healthy mouth.

The dentist: population ratio in Thailand is low at 1:7,800, varying from an extremely favourable 1: 1,422 in Bangkok, to a more typical and less satisfactory 1: 12,000 in the central and southern regions. There is a much worse ratio of 1: 128,000 in the remote rural northern area. In response to the need for more dental personnel, the existing eight dental faculties are increasing the numbers of undergraduates, a private dental faculty has begun to operate.

The Ministry of Public Health has expressed detailed expectations of these dental faculties in order to improve the oral health of the population. They are that the faculties will: the number of dental graduates; provide dental school entry quotas for students from outlying provinces; conduct campaigns aimed at reducing consumption of sweets; educate local communities on how to maintain healthy mouths; and provide of mobile services to remote areas of Thailand.

Against that background of requirement, it is clear that dental educational institutions should be aiming to meet the national need for well-trained dental professionals who can provide strategic plans to control common oral diseases such as caries in terms of proactive preventive measures. Those professionals should also be fully able to participate in the delivery of services by being skilful in diagnosing and treating these diseases and providing oral rehabilitative care.

3.3 Dental Education and Dental Training in Thailand

Currently Thailand has nine dental faculties with four public ones and one private one located in Bangkok. The training of Dental Therapists, Dental Surgery Assistants and Dental Technicians takes place in Thailand, with by far the largest group currently working being Dental Therapists. At present, this latter group works only in the Government Dental Service and numbers about 3,500. To further promote and regulate dental education and training, there is the Dental Council of Thailand, the Royal College of Dental Surgeons of Thailand and the Dental Association of Thailand. Additionally, for many years dentists seeking further clinical training have gone abroad, primarily to the United States, Germany, United Kingdom and Japan.

4. The Institution

4.1. Mahidol University

Founded in 1943 as the University of Medical Sciences, Mahidol University originates from the first medical school in Thailand, which was established at Siriraj Hospital on the west bank of the Chao Phraya River in Bangkok in 1890 by H. M. King Chulalongkorn. In 1969, H. M. King Bhumibol Adulyadej renamed the University for his father H. R. H. Prince Mahidol of Songkla, acknowledged as the father of modern medicine in Thailand. Since then the University has grown and diversified whilst maintaining its traditional approach to excellence. In addition to nine faculties devoted to health sciences (with three distinctive medical faculties and one dental faculty) there are also seven others including ones for science, engineering, arts, social sciences and environmental studies, and a number of centres.

Today in the metropolitan area of Bangkok, the University has a suburban campus (Salaya Campus) with two inner city campuses (the original site of Siriraj Hospital and the Phayathai Campus) and an office block area. Assisting in the expansion of higher education in more rural areas are three provincial campuses. Mahidol University benefits from substantial public funding amounting to approximately 8 billion baht annually, and obtains an additional 13.53 billion baht each year from income generating activities. Presently, there are approximately 24,000 students (15,500 undergraduates and 8,300 postgraduates), and 3,000 academic staff, giving a staff: student ratio of about 1:8. The university was ranked top amongst Thai universities in both research and teaching by the Ministry of Education survey and review in 2005.

Mahidol University conducts its undergraduate courses in the Thai language except for the International College. English language textbooks are widely used. Student research projects are often prepared in English as well as in Thai. Postgraduate programmes are available in the Thai language but increasing numbers of international programmes are in English. English is the language used in research theses of the University.

4.2. The Faculty of Dentistry.

The Faculty of Dentistry, Mahidol University, originally known as The Faculty of Dentistry, Phayathai Campus, University of Medical Sciences was established by royal command on June 7, 1968. It became the Faculty of Dentistry, Mahidol University on February 28, 1974, while its sister establishment at Henri Dunant Road, Bangkok, relocated to become the Faculty of Dentistry of Chulalongkorn University.

Initially the Faculty of Dentistry, Mahidol University, had one building housing 12 departments. In 1972, a second building opened and student admission increased to 60. Presently there are five buildings in operation and student admission has increased to 115. A sixth building will open in September 2007 allowing a phase of rationalisation to take place across the Phayathai site, including provision of a massive building of 78,886.25 m² to replace the three oldest buildings. At the same time, a further dental hospital of 10,000 m² will open within a larger medical facility at the Salaya Campus. Taken together, the two establishments will form the largest dental facility for teaching, service, training and research in Thailand.

The total undergraduate student body is 480 and they follow a 6-year curriculum. There are also programs providing postgraduate training in clinical dentistry and leading to Master of Science and Doctor of Philosophy degrees. These programmes are now expanding and being modernised. Training in sub-specialties of dentistry is also offered by way of internship and residency programmes. The Faculty's School of Dental Assistants conducts a one year diploma programme and its School of Dental Technology has two-year diploma programme which can be supplemented with an additional two years leading to a B.Sc. in Dental Technology. The major areas of research of the Faculty are oral biology, clinical research, craniofacial research material science and public health. The Faculty has 197 faculty members, 275 dental assistants, 35 dental technicians, 310 general management positions.

In keeping with its perceived role of providing innovations in dental education in Thailand, the Faculty has established a number of outreach oral healthcare delivery projects including the HRH Princess Maha Chakri Sirindhorn Royal Mobile Dental Service conducted at Bordered Police Primary Schools throughout the country and at The Kompong-Chertiean College, Kompongthom Province, Cambodia. A further substantial project directed towards development of oral healthcare human resource operates in Laos. Finally, Mahidol University Faculty of Dentistry has established the International Dental Collaboration of Mekong's River Region (IDCMR) Project in 2004. That cooperative on-going project involves dental institutions in Cambodia, PR China, Laos PDR, Vietnam, Myanmar, and Thailand, with Mahidol University and providing the Secretariat for that initiative.

5. Strategic Planning

5.1 The Philosophy of Mahidol University

The Philosophy of the University stems from its origins and the close involvement of H.M. King Bhumibhol in its objectives and activities. Founded in 1943 as the University of Medical Sciences, Mahidol University arose from the first medical school in Thailand, established at Siriraj Hospital in 1890. In 1969, H.M. King bestowed on the University the new title of "Mahidol University", after the name of his father, H.R.H. Prince Mahidol of Songkla, who is widely considered the father of modern medicine and public health in Thailand. The Prince's humanistic attitude was clearly expressed in his pronouncement to medical students of the time, "I do not wish you only to be a doctor but I also want you to be a human being." He also said "Real success exists not in learning but in its application for the benefit of mankind." In keeping with those sentiments the philosophy is stated as, "Do unto others as you would have others do unto you" on the University's website.

5.2 Mission, Vision and Objectives of the Faculty of Dentistry

The Faculty's states its Mission to provide excellent education to dental professionals with wise vision, keen thoughts, eagerness to learn and high moral standards. Its Vision is that it will dedicate itself to intellectual dental education, excellent quality oral health services and the finest basic and clinical research.

The Objectives of the Faculty align well with the Philosophy of the University, being:

- 1) To provide excellent education to dental professionals with wise vision, keen thoughts, eagerness to learn and possessing high moral standards;
- 2) To promote innovation in dentistry through research;
- 3) To offer excellent quality oral health services to the community;
- 4) To provide career-long academic services to dental professionals;
- 5) To provide oral health care education to the public; and,
- 6) To promote Thai culture and foster a respectful and supportive environment.

5.3 Comments on the Mission, Vision and Objectives of the Faculty

The Reviewers were deeply impressed by the commitment of the members of the dental staff and the dental students of the Faculty to the philosophy of the University as described above. The very high-minded concept of "Do unto others as you would have others do unto you" was clearly seen to be continuously guiding actions and strategies of the institution and its members. There was a strong sense by all staff and student that they were in a Royal university and consequently needed to live up to the special status and honour bestowed upon them. In particular they noted that the Mission Statement did cover some important core activities of the institution including research and clinical and community services.

However, the Reviewers considered that it would be useful to revise both the Faculty's Mission and Vision. The Vision as stated is more of a mission-like

statement and does not provide a sense of direction. It should be reworked and associated with specific goals that could be appreciated and worked towards by everyone. Reviewers suggested broadening of the Vision Statement so it included a “Dare to Dream” or “Reach for the Skies” concept that will challenge all in the Faculty of Dentistry to extend themselves to the fullest of their abilities.

The Reviewers regarded the Objectives as very well conceived and comprehensive, pointing the School in proper directions. They thought however that the wording of each objective might be expanded, and associated activities needed to achieve related goals should be specified. The mechanisms employed and time lines needed for achievement also should be widely disseminated and clearly explained to all staff, although this need not be incorporated in the statements

6. The Administrative Structure

6.1 An Outline of the Management Arrangements

The wide range of Faculty activities requires an extensive administrative structure to ensure efficient implementation. Currently, twelve Vice Deans report directly to the Dean. Each of the Vice Deans has an administrative job description. In the list of Vice Deans provided there are additional related areas that each post holder must address, so the overall coverage is very comprehensive. All Vice Deans are encouraged to interact with one another on matters that concern interrelated topics.

There are also fifteen Departmental Chairpersons involved in the smooth running of the institution. They hold responsibilities for the academic and clinical subject areas constituting the main body of the human and other resources of the Faculty. Each of the Vice Deans is required to assist departments and the Faculty body with regard to their needs in order to develop their working groups to be effective and efficient. They also ensure that departments can achieve their goals and encourage all the staff and students to partake in all the activities for good practice and management.

To ensure a unity of purpose there are also five operational dimensions or modalities that the Dean and Vice Deans must pursue and direct all the school staff to attend to in order to maintain the direction of the whole academic body and its structures. The five dimensions are:

1. Administration Affairs
2. Teaching and Education Affairs
3. Research and Development Affairs
4. Professional Academic and Patient Services
5. Cultural and Moral Affairs

6.2 Comments and Recommendations regarding the Administrative Structure

Major strengths of the Faculty administration lie in the regular monthly meeting arrangements that of the energetic and visionary Dean. Thus, she meets with the President of the University two times per month, and on a similarly frequent basis with the Faculty Vice Deans and Departmental Chairpersons. These arrangements were clearly driving forward in a most positive way an organisation of considerable

complexity. The Panel regarded these arrangements for communication, delegation and accountability an example of Best Practice.

The number and diversity of the functions held by the Vice Deans attracted the attention of the Reviewers. Whilst of the some of the designated responsibilities addressed conventional aspects of academia, for example, Undergraduate Education, Postgraduate Education and Research Activities, yet others seemed to be very administratively orientated. Amongst others in that category are Vice Deans for Finance, Information Technology, and Legal and Economic Affairs.

It was thought that that unless properly structured, this arrangement could lead to unwieldy executive meetings, placing a considerable burden upon the Dean with regard to the taking of key decisions. If all Vice Deans and Departmental Chairpersons attend meetings where decisions are made it cannot be apparent how they were arrived at and who is to be responsible for carrying them forward. That seemed unsatisfactory with regard to enabling the wider membership of the Faculty (staff and students) to understand the background to strategic decisions that would set goals and on occasion re-direct activities in the Faculty.

Instead, it is recommended that executive meetings should be of two types: those concerned with academic strategy and matters related closely with that strategy; others addressing administrative matters including finance and facilities. For the first type of meeting there should be an Academic Executive Committee chaired by Dean and composed of the Vice Deans for Undergraduate Education, Postgraduate and Professional Education, Research & Development, Student Affairs and International Relations. For the second group of meetings there would be an Operations Committee chaired by the Executive Vice Dean, with the membership consisting of the remaining six Vice Deans. Each Committee would minute its key decisions in a non-confidential way for wide circulation to all levels of staff including Departmental Chairpersons who thereby would be fully informed of the current thinking of the Faculty's leadership.

7. The Undergraduate Programme

7.1 The Undergraduate Curriculum and its Delivery

The Doctor of Dental Surgery Programme (DDS) is six years in length. The first year is devoted to general education and basic sciences, followed by two years of biomedical sciences and then three years of dental sciences. The curriculum employs a subject-oriented design with some integration of the learning material. It seeks to be both evidence and competency-based. Arrangements for delivery include lectures, discussions, laboratory-assisted learning, simulation laboratory practice, supervised clinical practice, fieldwork and research. Lectures and laboratory-assisted learning are the main delivery method in basic sciences and preclinical sciences. Dissection of human cadavers is available as a learning technique for anatomy.

Clinical dental sciences are delivered in a systematic fashion. Theory is given first, in lectures and seminars; it is followed by laboratory practice on typodont teeth or extracted human teeth and finally there exists extensive clinical practice under experienced guidance from clinical academic dentists where the ratio of staff to

students is never less than 1:4. Hospital dental practice and community dental care are organised as fully supervised dental clinic rotations and fieldwork.

Some comprehensive dental practice takes place in the final year, when problem-based learning tutorials also occur. Multimedia learning is encouraged throughout the Programme. The Faculty's E-learning Centre and Faculty of Dentistry Website offer strong support for those activities.

The different locations where the Faculty conducts teaching and learning, particularly in the context of the delivery of oral healthcare are mentioned above and considered further in the section of this report devoted to facilities. The mixture of urban and rural settings undoubtedly has a favourable impact on the students and is an important positive influence in their education at Mahidol University. An outstanding example is their community services work involving the Princess Sirindhorn Mobile Dental Unit, readily highlighted as an example of Best Practice for emulation by other institutions.

Clinical assessments and examinations are carried out in a thorough and traditional manner. Continuous assessments in the clinical years are discipline based and tend to look to number of items of treatment completed as outcome measures of learning and skill acquisition.

The Faculty regards all its educational programmes as being in a constant state of improvement and development. For the year 2007, the following elements were either introduced or given greatly increased prominence in the undergraduate curriculum: implantology; geriatric dentistry; communication skills; the use of an integrated knowledge base; evidence-based dental practice; and oral health promotion. Innovatively, future development plans include investigating the possibility of launching a combined DDS – PhD programme at some time in the future.

There are extensive quality assurance arrangements in place for the educational programmes. The Faculty provides secretarial and other support to a Faculty Internal Review Board and a University External Review Board. A Self Assessment Report Committee, and the Internal and External Review Boards evaluate progress in the five dimensions or modalities mentioned above, including teaching and learning activities, and the patient care which of course impacts directly on clinical education. Input from other stakeholders including feedback from graduating students, is routinely included in the evaluations, although it appears that some students fail to complete questionnaires before leaving. A more complete coverage of all departing students is planned, and a randomized and representative Programme evaluation by present students will soon be routinely obtained as an important source of feedback.

The Ministry of Education Accreditation Committee assesses the Programme every five years. In 2006, its evaluation of the Faculty ranked it first in both education and research among the dental faculties in Thailand. The Faculty is now seeking international peer reviews including the present SEEADE Review, of its activities. By responding to points and energetically and comprehensively responding to suggestions made at the end of the reviews it is hoped to maintain the first rank position in future accreditation exercises.

7.2 Comments on the Arrangements for the Undergraduate Curriculum

The Curriculum is clearly well conceived and relevant to the modern world, with commendable intent to integrate knowledge and skills. To ensure that continues, the Faculty should give attention to its internal organisational arrangements, as these are a factor in curriculum design and delivery. In addition to other effects, the departmental structure might be limiting further integration of learning materials and presenting barriers to successful implementation of other curriculum developments.

For example, comprehensive patient care should take place from beginning of the clinical component of the Programme and continue to the end of the final year. Departmental arrangements should facilitate progress toward that goal, and not inadvertently inhibit it. In particular, there should be regular discussions regarding use of time and resources devoted to each subject and topic of the curriculum so that educational need rather than historical distributions determines resource allocation.

The subjects included in the curriculum should also be a matter of ongoing discussion. It is very praiseworthy that members of the Faculty ensure that students undergo teaching and learning suitable for practice in rural areas as well as in cities and for wealthier patients. It should be a straightforward matter to ensure that the oral health priorities of the entire Thai population be given proper weight in curriculum design and subject choice. Thus, high technology forms of dentistry including implantology and complex orthodontics rightfully can be addressed in a balanced way, but so must more basic forms of oral healthcare designed to produce healthy mouths at modest cost for people who are less well off.

The Faculty uses Problem Based Learning as one of its educational methods, but only in the final year of the programme, although there are plans to deploy it more widely. The Reviewers had reservations regarding present arrangements of the PBL system. The number of students in the groups was quite large, and the discussion of a scenario was taking place over 5 sessions that is much more protracted than is usual. Earlier introduction of PBL into the curriculum should be considered, as this will help students consolidate their self directed and independent learning and thinking skills as they go into the senior years. The Vice Dean for Education should head a task force to investigate the various PBL methods and configurations used in dental institutions throughout the world with a view to finding the arrangement most suited to Mahidol University's dental students.

Although the curriculum is discipline-based, the intent is it should lead to a broad and wide-ranging education, providing many opportunities for each student to undergo personal development. In keeping with that enlightened approach, the formal clinical requirements that students must complete during clinical care of patients are minimal. In the event, during the programme the students will handsomely exceed the basic requirements in the wide variety of learning and healthcare situations they encounter. Overall, the aim is a real competency especially in skills, by the time students' graduate and it seems that indeed is the result of the arrangement. The Reviewers regarded that considered approach to clinical requirements as one of Best Practice.

Whilst applauding that philosophy regarding clinical requirements, the Panel thought there was room for improvement in other aspects of the clinical assessment system. There should be further integration so some assessments are multi-disciplinary, matching them with new educational directions. An example would be to launch assessments combining the different disciplines during the more widespread teaching of comprehensive patient care as proposed above. Furthermore, directly targeted competency assessments should be present in the examination activities of all disciplines as well as number of units completed as outcomes of clinical progress.

Finally, the Annual Curriculum Review carried out with inclusion of the views of recent student graduates and other stakeholders is an excellent example of Best Practice that could be emulated with great benefit by many other dental teaching institutions.

7.3 Broader Student Activities within the Faculty of Dentistry

In the spirit of Prince Mahidol's humanistic attitude and his exhortation to given to medical students, "I do not wish you only to be a doctor but I also want you to be a human being," all dental students of the Faculty are expected to participate in a wide range of activities beyond the narrower confines of dental studies. The aim is to produce excellent dental graduates with wide vision, keen thoughts, eagerness to learn, of high moral standards and impeccable professional ethics.

The Division of Student Affairs of the Faculty provides the expertise and resources so that that ideal is recognisable in all the University's dental students. Student study counselling and supervision is available, and the Division can arrange welfare benefits for students if required. It also supports the students in their appropriate extra-curricular activities and takes the lead in organizing the Faculty activities in academic and professional areas, in sports and recreations, religion and culture.

Presently there are seven different clubs within the over-arching Mahidol Dental Student Association. In addition to ongoing club activities there are also about 20 highlight events throughout the year. The Faculty also encourages and supports its students to join in many worthwhile public activities and hold themselves ready to volunteer to assist the authorities at times of minor or major natural disasters. Accordingly, dental staff and dental students were in the forefront of the harrowing but essential work to identify the bodies of Tsunami victims using dental records.

8. Postgraduate Programmes

8.1 Taught Postgraduate Programmes

At the time of the visit, 251 students had enrolled in taught postgraduate programmes, with 235 studying clinical science subjects and 16 basic science subjects. The arrangements of the available programmes vary considerably because restructuring of many is taking place. Previously most of the programmes were characterised by being almost entirely directed towards clinical training and were conducted in the Thai language. Such arrangements did not attract substantial numbers of overseas students, despite the quality and variety of the content of the programmes.

The traditional pathway in a speciality begins with a one-year course leading to a Higher Graduate Diploma, following which there is a three-year Residency Programme concluding with a Diplomate Examination. The Thai Dental Council and the Royal College of Dentistry of Thailand are involved in the administration of these programmes, and if completed successfully, the appropriate Thai Board admits the candidate. The pathway has been, and still is, is a major means of providing high quality, locally trained oral healthcare specialists for Thailand.

The Higher Diploma is available in the Thai language, in Advanced General Practice, Endodontics, Gnathology, Operative Dentistry, Oral and Maxillofacial Radiology, Oral and Maxillofacial Surgery, Oral Medicine, Pediatric Dentistry and Periodontics. Similar subjects are available in the three year Residency Programme. Time spent in the Higher Graduate Programme and the Residency Programme is credited in the Master's and PhD programmes.

The restructuring process going on at present involves changes in the content and mode of delivery of the programmes, and in their sequencing to form specialist-training pathways. Research activities are now included in the new programmes, which also use English as the medium of instruction. The pathways are modular so that overseas students can take only components suited to their needs. The new arrangements seem to be leading to a pathway starting with a one year Graduate Diploma, followed by a two year Master's Degree, and then finally a one year Higher Graduate Diploma which effectively would become an exit qualification for specialist training rather than an entry qualification to a residency programme as it is at present.

Different specialities are restructuring towards the common goal in different ways. Orthodontics for example is still taught in the Thai language but the pathway at present, consists of the two year Master of Orthodontics Degree and the one year new Higher Diploma respectively. However, in 2008, pending approval of the University Senate, these courses will combine and become an international programme.

Other International Master's degrees in Dentistry are now available. The subjects concerned are Community Dentistry, Advanced General Practice, Endodontics, Gnathology, Operative Dentistry, Oral Maxillofacial Prosthetics and Dental Oncology, Oral and Maxillofacial Radiology, Oral and Maxillofacial Surgery, Oral Medicine, Paediatric Dentistry and Periodontics. They are two-year duration and both clinical and research oriented. The University's Faculty of Graduate Studies oversees these programmes, which are approved by the University Senate and Ministry of Education of Thailand.

A fully-fledged pathway of the new type is imaginatively in the niche subject of Oral Maxillofacial Prosthetics and Dental Oncology. The subject itself is an exciting synthesis of relevant aspects of restorative dentistry, oral pathology and oral medicine, dental biomaterials science and oral surgery. An initial one year Graduate Diploma is available in this subject give a credit transfer of 40% to the Masters' programme in that speciality. On successfully passing the Master's degree (mentioned above with the other Faculty Master's degrees), students can enter a course as a fellowship for one-year duration.

In basic sciences, the programmes are all international programmes, being conducted in English. The Master of Science degrees in Oral Biology or Dental Biomaterials are two years in duration. The Ph.D. degrees in Oral Biology or Dental Biomaterials are three to four years duration. Credit can be transferred from Master's programmes.

As with the undergraduate DDS Programme, there are extensive quality assurance mechanisms for all of the postgraduate programmes. Bodies involved in scrutiny, (together with the Faculty's own internal arrangements) include the Faculty of Graduate Studies of the University, the University Senate the Ministry of Education of Thailand, the Thai Dental Council and the Royal College of Dental Surgeons of Thailand.

The Reviewers noted the quality of the postgraduate programmes. They are extremely well resourced, and there was a distinctive underpinning of quality by means of several different quality assurance mechanisms. The Oral Maxillofacial Prosthetics programme is particularly innovative, filling an important niche area in the region. Choosing a relatively unattended speciality field, yet one that offers clinical benefits to a segment of the population and provides a basis for extensive training activities and research projects are recognisable as a Best Practice that other dental institutions could follow advantageously. The change in content and the repositioning of postgraduate programmes so they become available in English and contain worthwhile research projects is also a commendable Best Practice.

Some matters need attention by the leadership. There was lack of interaction between students of the various postgraduate programmes. All would gain great benefit by learning about aspects of other disciplines and encountering students of different backgrounds. There should be more interdisciplinary components in all of the courses including attendance at joint clinics. For instance, a core programme in generic subjects such as statistics, craniofacial biology should help cross fertilisation of student activities in disparate programmes and also may relieve the teaching burden to some extent. In addition, there is a need to offer basic Thai language courses to international students to aid communication with patients they treat and allow them to participate more fully in the country that is hosting them.

8.2 Continuing Education and Professional Services

The Academic Promotion and Development Unit has the responsibility of providing learning and services for all Post-Graduate Programmes, including Graduate Diploma, Master of Science, Higher Graduate Diploma, Doctor of Philosophy, Residency and Specialty Training Programmes. In addition to these services, the Unit through the mechanism of the Faculty's Continuing Education Project also promotes and provides academic services as follows: short course training, special lectures, academic conferences and seminars in order to deliver the body of new knowledge and the latest progress in a wide scope of dental fields and specializations. The Continuing Education Project also collaborates with seven other institutes working under a network of dedicated institutions for training, conference and seminar arrangement.

Additionally the Unit produces the academic Mahidol Journal of Dentistry, provides grants for article publication in international journals, provides grants for promoting research work at the Doctor of Philosophy level and coordinates with the Office of the President, Mahidol University for matters of academic ranking. To maintain the highest standard of quality services, the Academic Promotion and Development Unit conducts the quality system, ISO 9001: 2000 throughout its core operations

9. Research Activity

9.1 Research Activity and Publications

The Research Centre Unit of the Faculty provides overall coordination and management of all the equipment and instruments obtained for research carried out by Faculty staff and students. There are three major research facilities; the Dental Biomaterial Laboratory, the Oral Biology Laboratory and the Cell and Tissue Culture Laboratory. Already accredited in administrative quality, ISO 9001:2000, it will soon earn ISO/IEC 17025:2005 Certified Accreditation for all three laboratories.

Concentration on human resource development is the present core of the Faculty's research strategy. Organisation of academic conferences, encouragement of staff to attend international seminars and fostering of collaborative research projects with other major universities are among some of the initiatives. There is provision of proper financial support aimed at improving the competencies of the students and staff, and increasing the output of high-quality research. Already the Faculty is responsible for substantial numbers of abstracts, oral health case reports and full articles; however at present, many of these are abstracts or in local oral health journals.

In the case of full articles, the numbers in Thai journals were 28, 14 and 48 for the three years commencing 2004. There were 47 abstracts and case reports. In the international arena, the equivalent numbers were 14, 5 and 16 articles for the three years, rather small for such a large Faculty, and 245 abstracts.

9.2 Research Products and Innovations

An interesting feature of all university research in Thailand is its alignment with the needs and characteristics of the country and its commercial sector. Among several main areas which have been announced as appropriate in approach there are: research into features of Thai traditional wisdom; building self-sufficiency using locally available materials, products and equipment; and studies into means of giving underprivileged persons access to healthcare and other supportive services.

The Faculty of Dentistry encourages its research active staff to seek patent registration and commercial applications through the help of the Mahidol University Applied and Technological Service Centre. For example, Faculty members earned a national research grant for novel research using a traditional medical herb entitled "Subgingival Administration of *Andrographis Paniculata* Gel and Metronidazole Gel as an Adjunct in the Treatment of Adult Periodontitis." Newly patented dental



products include fluoride rinses, chlorhexidine mouthwash, toothbrushes, toothpastes, and etching and chelating gels, Thai herbal extracts, and microbe detection kits.

Further enhancing and expanding research projects, the Dental Material and Substance Testing Centre aids research by non-Mahidol University community users. It funds collaborative research with other institutions such as the Project on Dental Implants in association with the National Science and Technology Development Agency (NSTDA). The Faculty has a Dental Material Production Centre for in-house and commercial product development that produces and markets dental biomaterials under its own M-Dent brand.

9.3 Comments on the Research Arrangements in the Faculty

The leadership of the Faculty are making considerable efforts to build up the research capability of the academic staff and postgraduate students. They are also intent on implanting a strong and widespread research culture in the organisation. Efforts to do this have begun well. The unified Research Centre within Faculty premises coordinating the effort can be cited as a good example of Best Practice. The Faculty has the further, possibly unique advantage of the well functioning innovative product development and enterprise arrangements mentioned above. These are very well organised and have impressive achievements in that specific area. The challenge is to create synergies with more curiosity-driven, longer-term research activities.

Against that very positive background, the Reviewers felt that yet more structural change was required so the full research potential of the Faculty could be realised. Many staff are very well trained including substantial numbers who have returned from abroad with PhD qualifications. However, it did seem that it was the norm for the research projects concerned to go in abeyance upon return. Evidence of this is the relatively low number of international publications.

The Reviewers recommend that in this area more than any other, the leadership continue to concentrate their efforts to produce an effective strategy to establish a widespread research culture. Strategies can include inviting international mentors to work with staff and increase international publications. There could be the creation of outstanding research awards for Faculty staff. Provision of protected time for staff to engage in research activities, and the organisation of a structured scheme of research mentorship for junior staff should also be considered. Above all, there should be the early establishment of inter-disciplinary research groups each with its own convener, and clear aims and objectives. These efforts will lead to achieving the proper balance between commercial innovation and the more purely academic research activities.

10. Human Resource

The Faculty has a substantial staff complement including 197 faculty members, 275 dental assistants, 35 dental technicians, and 310 individuals in general management positions. These personnel are organised into 10 clinical departments, 5 basic science departments and 8 support divisions and units. The expectation is that all staff continuously up-skill themselves. A praiseworthy goal is that eventually all substantiated academic staff will have a Ph.D. or equivalent research degree. Similar

qualification requirements appropriate to their grade and calling are being made of non-clinical scientists and other support staff in direct contact with the academic staff.

To meet these human resource development goals, substantial funds are available including a substantial annually replenished fund for academic staff and another for support staff. Often, the awards made are in the form of Higher Research Degree (HRD) Scholarships. Substantial numbers of these have been granted in recent years, with several recipients studying in extremely high quality academic institutions in Japan and the United States for quite long periods. There are also in-service training activities provided by the Faculty that are followed by many staff.

As with the educational programmes, so staff development is subject to sophisticated quality assessment and quality assurance techniques. Annual exercises have surveyed staff abilities and attitudes. Recommendations for improved human resource practices followed, including improved job descriptions, formulation of work-related competencies, analysis of workloads and setting of strategic goals. Consolidation of the resulting progress is achieved by other activities including invitations to guest speakers to discussion forums and the conduct of workshops on career progress issues. The Faculty Website has sections that are resources for staff development.

The achievement and stabilisation of highly qualified academic staff, many of whom have been extensively trained at world-class universities, is identifiable as Best Practice. Carefully considered recruitment strategies mean that the ratio of basic scientists to clinicians is quite favourable, and ensures that research techniques available in the Faculty are state of the art, and once again, this is a Best Practice.

The provision of adequate funds to send people abroad for many years to gain good qualifications and experience is admirable. The Reviewers found that all these and related efforts had been very successful in that all support staff, and academic staff in particular, were very loyal and happy to be working in Mahidol University. They were respectful of leadership and seemed very receptive to change.

Although it seemed there were obstacles to promotion needing consideration and discussion with the University authorities, most staff seemed quite contented. As a result, the Reviewers simply recommended in general, the continuance of existing human resource practices, but with sophisticated goal-setting systems being used to ensure that academic staff, particularly the younger ones, become enthusiastic members of the research groups which have been mentioned elsewhere in this report.

11. Physical Facilities

The Faculty's facilities at the Phayathai Campus and the Salaya Campus, are impressive. There are also additional outreach facilities elsewhere including mobile dental clinics. The two main establishments form the largest dental facility for teaching, service, training and research in Thailand. There are five buildings in operation at the Phayathai site, two of them nearly 40 years old. A sixth building recently opened is allowing rationalisation to take place across the site, including provision of a massive building of 78,886.25 m² to replace the three oldest buildings.

At the same time, a further dental hospital of 10,000 m² is opening within a large medical facility at the Salaya Campus called the Kanchanapisak Medical Centre. Management of that dental centre is from the Phayathai Campus, the two sites linked by fibre-optics for on-line communication and teleconferencing. Making this effort to establish a new big dental hospital at Salaya Campus with the resulting excellent opportunities for fresh patient acquisition is regarded as an example of Best Practice. The layout of the newly built medical and dental building readily facilitates the interaction of the state of the art, very comprehensive dental, medical and Chinese traditional medicine healthcare activities, yet another good example of Best Practice.

The dental facilities on each campus are predominantly organised into clinical areas, managed by clinical directors who are all full time Faculty members. There is extensive space at each site for support units and services. There are thirteen clinics containing 270 dental units at Phaya Thai Campus. The buildings there also house the Faculty's Computer Centre, Computer Media Production Unit, Audio-visual Centre, E-learning Centre, Main Library and E-library. The facility at Salaya will eventually have 144 dental chairs located in 10 clinics and 9 major surgical operating theatres. Patient attendances for the year starting from October 2005 were 375,865, mainly at Phaya Thai, with a small, but growing contribution from Salaya at that time.

The overall physical facilities are substantial and as they exist at present seem more than satisfactory. There is good availability of space and enviable equipment. The excellence of the library facilities and other supporting services were such that these are examples of Best Practice in respect of provision of infrastructure for teaching and research. However the Reviewers also thought there should be more medium size conference rooms in any future planning for small group activities and that these should be well equipped with IT facilities including having them being WiFi enabled so staff and student laptops can access the internet during meetings.

Looking ahead, the rationalisation on what is the major campus of the Faculty will produce a period when congestion and disruption may be the norm. Managing that situation whilst ensuring the new building at Phayathai and the new embedded dental hospital at Salaya come smoothly into operation will be a major challenge to the leadership. It will be important that the resulting major logistical challenges do not deflect the leadership from energetically implementing other recommendations in this report, particularly those concerning establishment of a research culture.

12. Conclusions

The Faculty of Dentistry of Mahidol University is a large and very impressive institution, whose present enviable position is the result of careful planning and dedicated implementation by numerous individuals, past and present. Faculty staff and students undertake a most comprehensive range of teaching, learning and discovery activities whilst delivering a wide range of oral healthcare procedures in several different settings, including the inner city and extreme rural areas. The



management arrangements including monitoring key features of the institution and feeding the results back into strategic change are extremely modern.

Despite the considerable size of its facilities and their multiple locations, there is a strong family feeling in this dental academic institution. Students and graduates exhibit social responsibility and professionalism. As already noted, staff members are very loyal to the institution and generally quite contented. The general awareness of being in one of the premier universities in the country, (with the Faculty of Dentistry currently being rated by assessment as first in Thailand for education and research), contributes to the overall sense of well-being. The Faculty's activities are in line with the expectations of the Ministry of Public Health, being strongly directed towards the benefit of the Thailand population.

However, there is not a sense of complacency. People are visibly anxious to progress and clearly want the Faculty be initially an acknowledged region leader of dental academia, then to take a position as one of the top worldwide dental institutions. There is every possibility that ambitious aspiration can be realised, particularly if the current rate of progress and development is maintained. However, that realisation will need extensive ongoing fine-tuning and sometimes quite dramatic shifts in the organisational structures at all levels. A substantial number of steps towards that end are mentioned in this Report and it was gratifying for the Reviewers to see that all the staff of the School appreciated the benefit of peer review and feedback.

SEAADE Peer Review Reports are never exhaustive in their descriptions of matters for praise or in their listings of areas for concern. Rather they identify some key matters that will enable the institution concerned to progress further towards full international status. In the case of the Faculty of Dentistry of Mahidol University, in order to maintain progress particularly in developing international quality research, it might like to follow the example of a number of successful dental institutions in the region and create a small panel of distinguished dental researchers from abroad who would make regular visits to the Faculty.

However, the overall theme of this Report is one of sincere congratulation to the Dean, her united senior management team and their large group of well-motivated colleagues who are already contributing so much to their country and more widely to dental academia. Many accomplishments are noted above, but looking to the future, the potential for further international cooperation through the International Dental Collaboration of the Mekong River Region, IDCMR, with participants from Cambodia, Indonesia, PR China, Lao PDR, Vietnam and Thailand is surely exceptional. This work of the Faculty in the Ayewaddy-Chao Phraya-Mekong River Region countries needs sustaining, and will be repaid in terms of the Faculty being recognised internationally as an extremely significant dental academic institution.



The Reviewers conclude this Report by wishing the Dean and the Vice Deans, their staff and students every success. They found the Visit extremely interesting and worthwhile in every way.

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Professor Toh Chooi Gait
Chairperson

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Professor Frederick Charles Smales
Rapporteur

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Professor Lakshman Samaranyake
Visitor

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Professor Grace Ong Hui Lian
Visitor

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