Information provided in this handbook is accurate at the time of publication. The Specialists Accreditation Board, Singapore, may make changes to the contents of this handbook from time to time.

This handbook is not a programme handbook of specialist training. For details of individual training programmes, as well as syllabi of examinations and assessments, please refer to the handbooks or documents produced by the respective administrators of specialist training programmes. Currently, the approved specialist training programme administrators are the Graduate School of Medical Studies, National University of Singapore, and the Academy of Medicine, Singapore (see Annex B).

Please direct all enquiries on specialist accreditation to:

The Secretary
Specialists Accreditation Board
Ministry of Health, Singapore
College of Medicine Building
16 College Road
Singapore 169854
Republic of Singapore
Tel:  (65) 3259160
Fax:  (65) 3259212

Please direct all enquiries on specific specialist training programmes in Singapore to:

Graduate School of Medical Studies  Academy of Medicine, Singapore
National University of Singapore 142 Neil Road
MD 5, Level 3 Singapore 088871
Lower Kent Ridge Road or Republic of Singapore
Singapore 119074
Tel:  (65)8743300 Tel:  (65)2238968
Fax:  (65)7731462 Fax:  (65)2255155
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5. Diagnostic Radiology
6. Emergency Medicine
7. Endocrinology
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14. Internal Medicine
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Annex A List of Specialities in the Register of Specialists

Annex B Specialist Training Programmes in Singapore Approved for the Purposes of Specialist Accreditation and Registration
This handbook serves as the national reference document for specialist training and accreditation. It is produced based on the new system of specialist accreditation and registration under the Medical Registration Act 1997 (Cap. 174), which came into operation on 3 April 1998.

This handbook is a guide for medical practitioners who wish to be trained as specialists. It will also help trainers, teaching hospitals and institutions, as well as professional bodies involved in specialist training, in the planning and implementation of specialist training programmes. Trainees should ensure that the programmes they enrolled in are approved by the Specialists Accreditation Board. For doctors trained overseas who wish to come to Singapore to practise as specialists, this handbook will provide important information on the procedure to apply for specialist accreditation and registration.

Answers to common questions about specialist training, accreditation, and registration are contained in the handbook. However, it does not contain details of individual specialist training programmes since different bodies that administer the programmes may design them differently to fulfil the requirements for specialist accreditation and registration.

Specialist training is an important part in the career development of many doctors. Our specialists must be those who have completed training programmes of high standards. The criteria spelt out in this handbook will ensure that our patients receive the services of competent specialists. We commend this handbook to your use and hope that it will help to build a high standard of training for medical specialists in Singapore.

Prof Tan Chorh Chuan
Chairman
Specialists Accreditation Board
Singapore
CHAPTER 1

INTRODUCTION

1. Specialist Accreditation and Registration in accordance with the Medical Registration Act

1.1. Under the Medical Registration Act 1997 (Cap. 174), which came into effect on 3 April 1998, a Register of Specialists has been established. Medical Practitioners in Singapore have to be registered in the Register of Specialists before they can be designated as 'specialists' and use the respective specialist titles (or the equivalent) in Annex A.

1.2. The Register of Specialists is maintained by the Singapore Medical Council and published in the Government Gazette for general information of the public.

1.3. Any medical practitioner who wishes to be registered in the Register of Specialists must obtain the Certificate of Specialist Accreditation from the Specialists Accreditation Board established by the Medical Registration Act.

1.4. The functions of the Specialists Accreditation Board are:
   • To define specialities in medicine for the purposes of maintaining and keeping the Register of Specialists; and
   • To determine the qualifications, experience and other conditions for registration as specialists in the Register of Specialists.

2. Procedure to Apply for Specialist Accreditation and Registration

2.1. The applicant shall apply for specialist accreditation using the prescribed form.

2.2. The application for specialist accreditation is allowed only in one speciality. The applicant shall choose one speciality from the list of approved specialities in the Register of Specialists (see Annex A).
2.3. The Specialists Accreditation Board, upon receiving an application from a medical practitioner for specialist accreditation, shall determine whether the applicant has fulfilled the requirements set forth by the Board for the issuing of the *Certificate of Specialist Accreditation*.

2.4. After receiving the *Certificate of Specialist Accreditation*, the medical practitioner shall apply to the Singapore Medical Council for specialist registration. The *Certificate of Specialist Registration* shall be issued to the medical practitioner when he is registered in the Register of Specialists.

2.5. For any case that deviates from the standard requirements stated in this handbook, the Specialists Accreditation Board shall have the authority to decide whether the candidate qualifies to be accredited as a specialist on a case-by-case basis.

2.6. Any medical practitioner who is aggrieved by the refusal of the Board to grant the *Certificate of Specialist Accreditation* may, within one month of the notice of the refusal, appeal to the Minister for Health whose decision shall be final.
CHAPTER 2

GENERAL REQUIREMENTS

1. The Applicant

1.1. Must be a medical practitioner registered (either full registration or conditional registration) with the Singapore Medical Council.

1.2. Must have obtained a relevant recognised basic specialist qualification and an exit specialist qualification.

1.3. Must have completed an approved specialist training programme in Singapore or overseas. The list of approved specialist training programmes in Singapore is in Annex B. Specialist training programmes conducted overseas, unless stated in this handbook, will be evaluated on a case-by-case basis. Trainees who intend to go overseas for specialist training are advised to clarify with the Specialists Accreditation Board as to whether the programmes are recognised for the purposes of specialist accreditation and registration in Singapore.

1.4. For medical practitioners who are trained overseas, if they wish to apply for specialist accreditation and registration, they must have completed an overseas specialist training programme acceptable to the Specialists Accreditation Board. Otherwise, they will have to enrol in one of the approved local specialist training programmes. The level of entry into the programme will be assessed taking into consideration the training received overseas.

2. The Specialist Training Programme

2.1. Approved specialist training programmes shall train medical practitioners to be ready for independent practice in the respective specialities upon the completion of the programmes.

2.2. The entire period of training shall range from 5 to 7 years, depending on the speciality.
2.3. In general, training shall be divided into 2 phases – Basic Specialist Training and Advanced Specialist Training.

2.3.1. Basic Specialist Training shall be for a period of not less than 3 years and the trainees must obtain the relevant recognised basic specialist qualification during this phase.

2.3.2. Advanced Specialist Training shall be for a period between 2 to 4 years, depending on the speciality. There shall be a formal assessment at the end of the training and the administrator of the training programme shall confirm in writing that the candidate has successfully completed the entire specialist training programme, so as to enable him to apply for specialist accreditation and registration.

2.4. In general, specialist training programmes in Singapore will be set up according to this framework. A trainee will only be allowed to proceed to Advanced Specialist Training after fulfilling all the requirements of Basic Specialist Training. However, it is recognised that overseas specialist training programmes may not fit exactly into this framework and doctors who have received their specialist training overseas will be evaluated on a case-by-case basis. If the training programme is deemed acceptable in terms of fulfilling the requirements in that particular speciality, the doctor can be accredited as a specialist directly by the Specialists Accreditation Board. Otherwise, the Board may reject the application or require the doctor to take up additional training.

2.5. Part-time training will be pro-rated for the purpose of computation of training period and would be allowed generally for up to 1 year of full time equivalent of the total training period for Basic Specialist Training, as well as for Advanced Specialist Training. The rest of the training period should be fulfilled in a full time training post.

2.6. Trainees are expected to participate in research activities, conferences and seminars in the relevant fields at all stages of specialist training. Up to 20% of the training period required for Advanced Specialist Training can be fulfilled by time spent in approved research projects. Research activities cannot be used to replace any training period required for Basic Specialist Training.
2.7. Besides the specific training contents stated under the respective specialities in this handbook, all training programmes are expected to include common topics concerning the practice of medicine and the care of patients, such as medical ethics, medico-legal issues, communication skills, organisation and delivery of health services, and understanding of the development of the speciality concerned and its relation to other disciplines.

2.8. Trainees should keep a training logbook and supervisors are required to submit reports on the progress of the trainees to the administrator of the specialist training programme.

3. **After Registration as a Specialist**

3.1. A registered specialist shall take part in continuing medical education, especially in the speciality he is registered in, and ensure that his knowledge and skills are regularly updated so as to maintain his competence to practise.

3.2. A registered specialist is not precluded from practising other fields of medicine related to the speciality he is registered in since there are some overlapping areas in the practice of medicine.
CHAPTER 3

SPECIFIC REQUIREMENTS OF THE SPECIALITIES

1. The specific requirements for specialist accreditation and registration for the respective specialities will be described in the 2 phases of training – Basic Specialist Training and Advanced Specialist Training.

2. Under each phase of training, the trainee will have to fulfil all the requirements in terms of:

   • Training Period – Basic Specialist Training and Advanced Specialist Training.
   • Specialist Qualifications – Basic Specialist Qualification and Exit Specialist Qualification.
   • Postings – In Accredited Training Units.
   • Training Contents.

3. Trainees will have to obtain a relevant recognised basic specialist qualification and an exit specialist qualification (unless stated otherwise). However, obtaining the basic or exit specialist qualification does not imply the completion of that phase of training unless all other requirements, including the required training period, have also been fulfilled.

4. Only Singapore specialist qualifications are listed in this handbook (except specialities for which local specialist qualifications are still not available). The list of recognised overseas specialist qualifications that are considered equivalent to the Singapore specialist qualifications listed in this handbook is maintained separately by the Specialists Accreditation Board. This list will be updated from time to time depending on changes in the specialist training systems overseas. The current list of recognised overseas specialist qualifications can be obtained from the Secretary of the Specialist Accreditation Board on request. Qualifications not included in the list will be assessed on a case-by-case basis.

5. For specialities that have specific requirements of procedural experience, trainees will have to fulfil these requirements within the training period.
SPECIALITY NO. 1

ANAESTHESIOLOGY

1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- 3 years in accredited units of Anaesthesiology.

1.3. Training Contents

Anaesthesiology in:
- Cardiothoracic Surgery.
- Dental Surgery.
- Electroconvulsive Therapy.
- General Surgery.
- Neurosurgery.
- Obstetrics and Gynaecology.
- Ophthalmology.
- Otorhinolaryngology.
- Orthopaedic Surgery.
- Outpatient Surgery.
- Paediatric Surgery.
- Pain Management.
- Plastic Surgery.
- Radiological Procedures.
- Urology.
- Vascular Surgery.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>MMed (Anaesthesiology)</td>
<td>National University of Singapore</td>
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<td>Or Equivalent</td>
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</tr>
</tbody>
</table>
2. **Advanced Specialist Training**

2.1. Training Period

- 3 years.

2.2. Postings

- 3 Years in accredited units of Anaesthesiology.

2.3. Training Contents

Advanced Anaesthesiology in:
- Cardiothoracic Surgery.
- Dental Surgery.
- Electroconvulsive Therapy.
- General Surgery.
- Neurosurgery.
- Obstetrics and Gynaecology.
- Ophthalmology.
- Otorhinolaryngology.
- Orthopaedic Surgery.
- Outpatient Surgery.
- Paediatric Surgery.
- Pain Management.
- Plastic Surgery.
- Radiological Procedures.
- Urology.
- Vascular Surgery.

2.4. Exit Specialist Qualification

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<tr>
<td>FAMS (Anaesthesiology)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
SPECIALITY NO. 2

CARDIOLOGY

1. Basic Specialist Training

- To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Cardiology.
- The core training programme takes 2 years. After that:
  - Trainees working in general medical units should spend another 1 year in accredited units of Cardiology and the Coronary Care Unit.
  - Trainees working in tertiary cardiology units should spend an additional 1 year in a subspeciality of Cardiology.

2.3. Training Contents

- Acute Coronary Care.
- Ambulatory Cardiology Tests and Cardiac Rehabilitation.
- Cardiac Catheterisation and Intervention.
- Clinical Cardiology.
- Echocardiography.
- Electrophysiology and Pacemakers.
- Nuclear Cardiology.

2.4. Exit Specialist Qualification

<table>
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<th>Qualification</th>
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<td>FAMS (Cardiology)</td>
<td>Academy of Medicine, Singapore</td>
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</table>

9
SPECIALITY NO. 3

CARDIOTHORACIC SURGERY

1. Basic Specialist Training
   • To complete Basic Specialist Training in Surgery.

2. Advanced Specialist Training

   2.1. Training Period
       • 4 years.

   2.2. Postings
       • 4 years in accredited units of Cardiothoracic Surgery.

   2.3. Training Contents

      2.3.1. Cardiac Surgery
          • Coronary.
          • Congenital – Open Heart and Close Heart.
          • Valvular.
          • Others (e.g. tumour, pericardectomy).

      2.3.2. Thoracic Surgery
          • Bronchoscopy.
          • Major (e.g. lobectomy, pneumonectomy, mediastinal).
          • Minor (e.g. pleurodesis, video assisted thoracoscopic surgery).

      2.3.3. Vascular Surgery
          • Major (e.g. thoracic, abdominal aortic aneurysm, femoral, popliteal, carotid).
          • Minor (e.g. embolectomy).
2.4. Exit Specialist Qualification

<table>
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<th>Qualification</th>
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<tbody>
<tr>
<td>FAMS (Cardiothoracic Surgery)</td>
<td>Academy of Medicine, Singapore</td>
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</table>
SPECIALITY NO. 4

DERMATOLOGY

1 Basic Specialist Training

- To complete Basic Specialist Training in Internal Medicine.

2 Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Dermatology.

2.3. Training Contents

- Biology and Pathophysiology of the Skin.
- Disorders arising in the Skin and Mucous Membranes.
- Disorders of the Dermis.
- Dermatology and Internal Medicine.
- Dermatopathology.
- Disorders due to Microbial Agents.
- Paediatric Dermatology.
- Therapeutics (including Dermatosurgery).

2.4. Exit Specialist Qualification

<table>
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<th>Qualification</th>
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<td>FAMS (Dermatology)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
1. **Basic Specialist Training**

1.1. Training Period

- 3 years.

1.2. Postings

- 3 years in accredited units of Diagnostic Radiology.

2.4. Training Contents

- Accident and Emergency Radiology Reporting.
- Angiography.
- Computerised Tomography.
- Fluoroscopy.
- Interventional Radiology.
- Intravenous Urography.
- Magnetic Resonance Imaging.
- Neuroradiology.
- Nuclear Medicine Training.
- Obstetric and Gynaecological Radiology.
- Paediatric Radiology.
- Plain Radiography.
- Ultrasonography.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Conferring Institution</th>
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<tbody>
<tr>
<td>MMed (Diagnostic Radiology)</td>
<td>National University of Singapore</td>
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<td>Or Equivalent</td>
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</tbody>
</table>
2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Diagnostic Radiology, of which 1 year should be spent in a subspeciality of Diagnostic Radiology.

2.3. Training Contents

- Angiography.
- Arthrography.
- Barium Studies.
- Computerised Tomography.
- Mammography.
- Micturition Cystoureterography.
- Myelography.
- Interventional Radiology.
- Intravenous Urography.
- Magnetic Resonance Imaging.
- Neuroradiology.
- Plain Radiography.
- Ultrasonography.

2.4. Exit Specialist Qualification

<table>
<thead>
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<th>Qualification</th>
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<tbody>
<tr>
<td>FAMS (Diagnostic Radiology)</td>
<td>Academy of Medicine, Singapore</td>
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<td>Or Equivalent</td>
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</table>
SPECIALITY NO. 6

EMERGENCY MEDICINE

1. Basic Specialist Training

1.1. Training Period

• 3 years.

1.2. Postings

• 6 months in accredited units of General Medicine.
• 6 months in accredited units of General Surgery.
• 6 months (either singly or as a combination of postings) in accredited units of medical disciplines, such as Cardiology, Dermatology, Endocrinology, Gastroenterology, Haematology, Medical Oncology, Neurology, Paediatric Medicine, Renal Medicine and Respiratory Medicine.
• 6 months (either singly or as a combination of postings) in accredited units of surgical disciplines such as Burns and Plastic Surgery, Cardiothoracic Surgery, Colorectal Surgery, Hand Surgery, Neurosurgery, Orthopaedic Surgery, Otorhinolaryngology, Paediatric Surgery and Urology.
• 12 months in accredited units of Emergency Medicine.

1.3. Training Contents

Trauma and non-Trauma aspects of Emergency Medicine in the following areas:
• Abdomen and Gastrointestinal System.
• Cardiovascular System.
• Cutaneous Disorders.
• Disorder caused by Biological, Chemical, Environmental and Immunological Agents.
• Haematological Problems.
• Head and Neck Disorders.
• Musculoskeletal Disorders.
• Neurological Disorders.
• Paediatric Problems.
• Psychiatric Disorders.
• Respiratory Disorders.
1.4. Basic Specialist Qualification

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<tr>
<th>Qualification</th>
<th>Conferring Institution</th>
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<tbody>
<tr>
<td>FRCS (A&amp;E) (Edin)</td>
<td>Royal College of Surgeons of Edinburgh</td>
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</table>

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Emergency Medicine.

2.3. Training Contents

Trauma and Non-Trauma aspects of Emergency Medicine in the following areas:

- Abdomen and Gastrointestinal System.
- Cardiovascular System.
- Cutaneous Disorders.
- Disorder caused by Biological, Chemical, Environmental and Immunological Agents.
- Haematological Problems.
- Head and Neck Disorders.
- Musculoskeletal Disorders.
- Neurological Disorders.
- Paediatric Problems.
- Psychiatric Disorders.
- Respiratory Disorders.

Manipulative procedures in the practice of Emergency Medicine.

Administrative aspects of Emergency Medicine – covering various aspects of the operations of an Emergency Department.

Disaster Medicine – organisation and co-ordination of disaster site and hospital medical care, including the supervision of initial patient care.
Pre-Hospital Emergency Medical Services – Organisation of pre-hospital emergency medical services and protocols and supervision of emergency medical care in this area.

2.4. Exit Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Conferring Institution</th>
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<tbody>
<tr>
<td>FAMS (Emergency Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
1. Basic Specialist Training

To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 30 months in accredited units of Endocrinology.
- 6 months in accredited units of related specialities.

2.3. Training Contents

- Adrenal Disorders.
- Calcium and Skeletal Disorders.
- Diabetes Mellitus.
- Endocrine Emergencies.
- Endocrine Hypertension.
- Endocrinology in relation to:
  - Ageing and Menopause.
  - Obesity.
  - Psychiatric Disorders.
  - Sexual Dysfunction.
- Fluid, Electrolyte and Acid-Base Metabolism Disorders.
- Hormone-producing Neoplasms.
- Hypoglycaemic Disorders.
- Hypothalamic and Pituitary Disorders.
- Imaging in Endocrinology.
- Laboratory Endocrinology.
- Lipid Disorders.
- Paediatric Endocrinology.
- Reproductive Endocrinology.
- Thyroid Diseases.
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<th>Qualification</th>
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<td>FAMS (Endocrinology)</td>
<td>Academy of Medicine, Singapore</td>
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</tr>
</tbody>
</table>
1. Basic Specialist Training

- To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Gastroenterology.

2.3. Training Contents

- Clinical Gastroenterology.
- Endoscopy:
  - Gastroduodenoscopy.
  - Colonoscopy (including Polypectomies).
  - Rigid and Flexible Sigmoidoscopy.
- Percutaneous Liver Biopsy.
- Small Bowel Biopsy.
- Trainees must acquire the knowledge and be able to interpret:
  - Abdominal Angiography.
  - Abdominal Ultrasonography (hepatobiliary & pancreatic).
  - Barium Meals, Small Bowel Enema, Barium Enema.
  - Cholangiography.
  - Computerised Tomography of the Abdomen.
- Procedures that trainees are advised to learn:
  - Endoscopic Retrograde Cholangiopancreatography.
  - Gastrointestinal Manometry.
  - Pancreatic Function Tests.
  - Therapeutic Endoscopy.
  - 24-hour pH Studies.
2.4. Exit Specialist Qualification

<table>
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<tr>
<td>FAMS (Gastroenterology)</td>
<td>Academy of Medicine, Singapore</td>
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<td>Or Equivalent</td>
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</tbody>
</table>
SPECIALITY NO. 9

GENERAL SURGERY

1. Basic Specialist Training (in Surgery)

1.1. Training Period

- 3 years.

1.2. Postings

- 6 months in accredited units of General Surgery.
- 6 months in accredited units of Orthopaedic Surgery.
- 24 months in accredited units of other surgical specialities.

1.2. Training Contents

- Cardiothoracic Surgery.
- General Surgery with Emergency.
- Neurosurgery.
- Orthopaedic Surgery with Trauma.
- Otorhinolaryngology.
- Paediatric Surgery.
- Plastic Surgery.
- Surgical Intensive Care.
- Urology.

Courses:
- Basic Surgical Skills Course.
- Advanced Trauma Life Support Course.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tr>
<td>MMed (Surgery)</td>
<td>National University of Singapore</td>
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</table>
2. Advanced Specialist Training

2.1. Training Period

• 3 years.

2.2. Postings

• 3 years in accredited units of General Surgery, of which 1 year is preferably spent in a subspeciality of General Surgery.

2.3. Training Contents

• Breast & Endocrine Surgery.
• Colorectal Surgery.
• Critical Care & Trauma.
• Endoscopy.
• General Surgery with Emergency Surgery.
• Head and Neck Surgery.
• Hepatobiliary and Pancreatic Surgery.
• Laparoscopic Surgery.
• Peripheral Vascular Surgery.
• Transplantation.
• Upper Gastrointestinal Surgery.

Course:
• Advanced Surgical Skills Course.

2.4. Exit Specialist Qualification

<table>
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<td>Academy of Medicine, Singapore</td>
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</table>

1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Internal Medicine.

2. **Advanced Specialist Training**

   2.1. **Training Period**
   - 3 years

   2.2. **Postings**
   - 3 years in accredited units of Geriatric Medicine.

   2.3. **Training Contents**
   - Acute Geriatric Medicine.
   - Community Geriatric Medicine.
   - Day Hospital.
   - Geriatric Orthopaedics.
   - Intensive Care.
   - Internal Medicine.
   - Palliative Medicine.
   - Psychogeriatrics.
   - Rehabilitation Medicine.
   - Selected Medical Disciplines.

   2.4. **Exit Specialist Qualification**

<table>
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<th>Qualification</th>
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</table>
1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Internal Medicine.

2. **Advanced Specialist Training**
   2.1. **Training Period**
   - 3 years.

   2.2. **Postings**
   - 3 years in accredited units of Haematology:
     - 12 months in Clinical Haematology.
     - 6 months in Laboratory Haematology.
     - 6 months in Transfusion Medicine and Immuno-Haematology.
     - 12 months in subspecialities of Haematology

   2.3. **Training Contents:**

   2.3.1. **Basic Haematology**
   
   (a) **Clinical Haematology**
   - Development of Clinical Studies.
   - Treatment Protocols.
   - Treatment Research.

   (b) **Laboratory Haematology**
   - Basic Cell Cultures.
   - Basic Coagulation Studies.
   - Basic Laboratory Research.
   - Blood and Bone Marrow Morphology.
   - Cytogenetics.
   - Flow Cytometry.
   - Molecular Studies.
(c) Transfusion Medicine and Immuno-Haematology
- Adverse Effects of Blood Transfusion.
- Apheresis.
- Blood Group System.
- Blood Preservation.
- Fundamentals of Immunology for Blood Bankers.
- Modern Principles in Blood Banking.
- Transfusion Therapy.
- Transfusion Transmitted Viruses.

2.3.2. Haematology Subspecialities
- Coagulation and Thrombosis
- Haemato-Oncology
- Immuno-Haematology and Transfusion Medicine
- Laboratory Haematology
- Stem Cell Transplant

2.4. Exit Specialist Qualification

<table>
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<tr>
<td>FAMS (Haematology)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
SPECIALITY NO. 12

HAND SURGERY

1. Basic Specialist Training
   - To complete Basic Specialist Training in Surgery.

2. Advanced Specialist Training

   2.1. Training Period
   - 3 years.
   - For those who have completed Advanced Specialist Training in Orthopaedic Surgery or Plastic Surgery, the training period will be determined on a case-by-case basis (minimum 1 year) based on the previous training and experience of the candidates.

   2.2. Postings
   - 30 months in accredited units of Hand Surgery.
   - 6 months in accredited units of Orthopaedic Surgery or Plastic Surgery.

   2.3. Training Contents
   - Congenital Abnormalities of the Hand and Upper Limb.
   - Functional Anatomy and Biomechanics of the Hand and Upper Limb.
   - Hand Trauma Surgery.
   - Infection of the Hand.
   - Pathophysiology of Hand and Upper Limb Disorders.
   - Peripheral Nerve Surgery.
   - Reconstructive Microsurgery.
   - Rehabilitation.
   - Replantation Surgery.
   - Surgery of Tumours, Degenerative and Inflammatory Disorders of the Hand.
   - Surgery of Neuromuscular Disorders of the Upper Limb.
   - Wrist Trauma and Disorders and Arthroscopic Surgery.
• Practical Training:
  – Common Hand Conditions.
  – Congenital Hand Reconstructions.
  – Corrective Osteotomies.
  – Digit Replantations.
  – Fracture Fixations.
  – Free Tissue Transfers.
  – Hand Dissections.
  – Local and Regional Flaps in the Hand.
  – Microsurgical Laboratory.
  – Nerve Repairs and Graftings.
  – Tendon Repairs and Graftings.
  – Tendon Transfers.
  – Tenolysis and Arthrolysis.
  – Wrist Arthroscopies.
  – Wrist Fixations.

2.4. Exit Specialist Qualification

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</table>
SPECIALITY NO. 13

INFECTIOUS DISEASES

1. Basic Specialist Training

• To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

2.1. Training Period

• 3 years.

2.2. Postings

• 24 months in accredited units of Infectious Diseases.
• 12 months in accredited units of related specialities, which may include up to 6 months of research related to Infectious Diseases.

2.3. Training Contents

• Antimicrobial Utilisation.
• Communicable Diseases – including typhoid, diarrhoeal diseases, dengue, chickenpox, etc.
• Hospital-based Infectious Disease – including pyrexia of unknown origin, unusual infections, nosocomial infections with antibiotic-resistant organisms, etc.
• Human Immunodeficiency Virus Infection.
• Infection Control and Hospital Epidemiology
• Infections in Immunocompromised Hosts – including cancer, transplant, immunosuppressive therapy such as systemic lupus erythematosus and other autoimmune diseases.
• Intensive Care Unit Infections – including septic shock, those associated with trauma and burns, etc.
• Surgical Infections – including those involving abdominal, orthopaedic, cardiothoracic, neurosurgical, ophthalmological, and otorhinolaryngological surgery, and infections in prosthetic devices.
• Travel Medicine and Travel Related Infections.
2.4. Exit Specialist Qualification

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</tbody>
</table>
1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- 3 years in accredited units of medical specialities, of which at least 1 year must be in accredited units of General Internal Medicine.

1.3. Training Contents

General Internal Medicine and exposure to the following disciplines:

- Cardiology.
- Critical Care.
- Dermatology and Venereology.
- Emergency Medicine.
- Endocrinology.
- Gastroenterology.
- Geriatric Medicine.
- Haematology and Transfusion Medicine.
- Immunology
- Infectious Diseases.
- Medical Oncology.
- Neurology.
- Paediatric Medicine.
- Rehabilitation Medicine
- Renal Medicine.
- Respiratory Medicine.
- Rheumatology.
- Psychiatry.
1.4. Basic Postgraduate Qualification

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</tbody>
</table>

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- At least 2 years in accredited units of General Internal Medicine.
- The other 1 year in accredited units of General Internal Medicine and/or other medical disciplines.

2.3. Training Contents

- Broad based training in Internal Medicine.
- At the end of the Advanced Specialist Training Programme, the trainee should have adequate training in preventive medicine, general management of acute and chronic medical conditions, and the rehabilitation of patients.

2.4. Exit Specialist Qualification

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<th>Qualification</th>
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<td>Academy of Medicine, Singapore</td>
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</table>
SPECIALITY NO. 15

MEDICAL ONCOLOGY

1. Basic Specialist Training
   • To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

   2.1. Training Period
       • 3 years.

   2.2. Postings
       • 3 years in accredited units of Medical Oncology, including exposure to Radiotherapy and Surgical Oncology.

   2.3. Training Contents

      2.3.1. Training Criteria

          • Clinical Management of Patients with Malignancies:
              - Assessment.
              - Investigation.
              - Diagnosis.
              - Staging.
              - Treatment.
              - Palliative and Supportive Care.
          • Knowledge of the Role of Surgery and Radiotherapy in Cancer Care.
          • Understanding of Major and Important Cancer Trials:
              - Historical Basis
              - Objectives
              - Results
              - Critical Analysis of their Value
              - Application of the Results.
          • Research – Clinical and Laboratory.
2.3.2. Core Curriculum

(a) Basic Sciences

- Epidemiology of Cancer.
- Principles of Carcinogenesis.
- Principles of Cell Proliferation and Kinetics, Types and Classification of Various Neoplastic Diseases.
- Principles of Molecular Cell Biology in Cancer.

(b) Clinical Management

- Care of the Terminally Ill (including Hospice Care), Management of Pain Control and Bereavement.
- Chemotherapy:
  - Adjuvant Chemotherapy in Cancer.
  - Chemoprevention.
  - Chemotherapy in Chemosensitive Maglinancies.
  - Different Roles of Chemotherapy in Different Malignancies.
  - Palliative Chemotherapy.
  - Principles and Practical Problems of High-Dose Chemotherapy and Stem Cell Transplantation.
  - Principles of Chemotherapy, including Classes of Cytotoxic Agents, Mechanisms of Action, Adverse Side-Effects and Drug Resistance.
  - Primary / Induction Chemotherapy
  - Regional Chemotherapy.
- Complications of Cancer.
- Immunology of Cancer and Application of Immuno-modulators in the Treatment of Cancer.
- Liquid Malignancies.
- Management of Metastatic Disease.
- Management of Oncologic Emergencies, including
  - Cord Compression.
  - Hypercalcaemia.
  - Neutropenic Infections.
  - Superior Vena Caval Obstruction.
  - Tumour Lysis Syndrome.
  - Raised Intra-cranial Pressure.
- Supportive Care of Cancer Patient:
  - Infections in Cancer Patients.
  - Management of Cancer Pain.
  - Nutritional Support.
  - Use of Blood and Blood Products.
- Understand and Manage Adverse Effects of Treatment.
(c) Others

- Design and Conduct of Clinical Trials.
- General Haematology.
- Principles of Cancer Screening.
- Principles of Genetic Counselling.
- Principles of Infectious Diseases.
- Principles of Radiotherapy.
- Principles of Surgical Oncology.
- Social, Psychological and Rehabilitative Aspects of Cancer Care.

2.4. Exit Specialist Qualification

<table>
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<tbody>
<tr>
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<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Internal Medicine.

2. **Advanced Specialist Training**
   
   2.1. **Training Period**
   - 3 years.

   2.2. **Postings**
   - 3 years in accredited units of Neurology, including exposure to Neurosurgery and Psychiatry.

   2.3. **Training Contents**
   - Autonomic Nervous System.
   - Behavioural Neurology.
   - Clinical Neurochemistry.
   - Clinical Neuroimaging.
   - Clinical Neuroimmunology.
   - Clinical Neurophysiology.
   - Clinical Pathology.
   - Correlative and Clinical Neurophysiology.
   - Critical Care of Emergency Neurology.
   - Genetic and Molecular Neurology.
   - Neuro-Oncology.
   - Neurologic Problems in Pregnant Women.
   - Neuropathology.
   - Neuropharmacology and Therapy.
   - Neuropsychiatry.
   - Neurosurgery and Orthopaedic Surgery in Neurology.
   - Neurological Rehabilitation.
   - Paediatric Neurology.
2.4. Exit Specialist Qualification

<table>
<thead>
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<tbody>
<tr>
<td>FAMS (Neurology)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
Training will follow the programme of one of the following institutions:
- The Royal Australasian College of Surgeons.
- The Royal Colleges of Surgeons, UK.
Other training programmes will be assessed on a case-by-case basis.

1. **Basic Specialist Training**

1.1. Training Period
- 3 years.

1.2. Postings
- Before obtaining the basic specialist qualification, postings will be those required for taking the respective Examinations.
- After obtaining the basic specialist qualification, postings will be in accredited units of Neurosurgery.

Note: There must be a minimum of 6-month posting in Neurosurgery during Basic Specialist Training before starting Advanced Specialist Training.

1.3. Training Contents

1.3.1. Basic Surgical Training
- General Surgical Knowledge and Skills.

1.3.2. Basic Neurosurgical Training
- Basic Sciences:
  - Neuroanatomy.
  - Neurophysiology.
  - Neuropathology
- Basic Neurosurgical Knowledge and Skills:
  - Clinical Neurology
  - Clinical Neurosurgery
- Neuro-Ophthalmology
- Neuro-Otology
- Neuroradiology
- Neurotrauma
- Operative Neurosurgery

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>FRACS (Neurosurgery) (Part I)</td>
<td>Royal Australasian College of Surgeons</td>
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<tr>
<td>MMed (Surgery)*</td>
<td>National University of Singapore</td>
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</table>

* Pending MMed (Neurosurgery).

2. Advanced Specialist Training

2.1. Training Period

- 4 years.

2.2. Postings

- 4 years in accredited units of Neurosurgery.

2.3. Training Contents

- At the completion of training, the trainee should be competent to handle uncomplicated Neurosurgical cases confidently, and able to proceed to training in a subspeciality of Neurosurgery.
2.4. Exit Specialist Qualification

<table>
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<th>Qualification</th>
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<tbody>
<tr>
<td>FAMS (Neurosurgery)</td>
<td>Academy of Medicine, Singapore</td>
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</table>

Note: For the award of FAMS (Neurosurgery), trainees are required to first obtain FRACS (Neurosurgery) or FRCS (Surgical Neurology) (UK), or the equivalent.
1. Basic Specialist Training

1.1. Training Period

- 3 to 4 years.

1.2. Postings

- 2-3 years in accredited units of Internal Medicine, or 3 years in accredited units of Diagnostic Radiology.
- 1 year in accredited units of Nuclear Medicine.

1.3. Training Contents

- General Training in Internal Medicine or Diagnostic Radiology.
- Basic Training in Nuclear Medicine:
  - Basic Sciences related to Nuclear Medicine (radiation physics, nuclear medicine instrumentation, radiation biology and protection, radiopharmacy and radiochemistry, computing and image processing.
  - Clinical Imaging Procedures.
  - Interpretation of Simple Clinical Studies.
  - Radionuclide Therapy and Follow-Up of Uncomplicated Therapy Cases.
  - Radiopharmacy Procedures, Preparation of Radiotracers.

1.4. Basic Specialist Qualification

<table>
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<th>Qualification</th>
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<td>MMed (Diagnostic Radiology)</td>
<td>National University of Singapore</td>
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<tr>
<td>MMed (Internal Medicine)</td>
<td>National University of Singapore</td>
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</tbody>
</table>
2. Advanced Specialist Training

2.1. Training Period
   • 3 years.

2.2. Postings
   • 3 years in accredited units of Nuclear Medicine.

2.3. Training Contents
   • Vet Nuclear Medicine Requests and Select Appropriate Investigations.
   • Perform and Interpret More Complex Diagnostic Studies, including Cardiac and Brain Single Photon Emission Computerised Tomography, Renal Interventional Studies, Paediatric Studies.
   • Perform More Advanced Image Processing and Data Manipulation.
   • Manage More Complicated Cases of Radionuclide Therapy.

2.4. Exit Specialist Qualification

<table>
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<tr>
<td>FAMS (Nuclear Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
SPECIALITY NO. 19

OBSTETRICS AND GYNAECOLOGY

1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- 3 years in accredited units of Obstetrics and Gynaecology.

1.3. Training Contents

1.3.1. Clinical Training

- Trainees should be exposed to the various subspecialities of Obstetrics and Gynaecology, Ultrasonography and Colposcopy.

1.3.2. Education Programme

- Anatomy.
- Clinical Epidemiology.
- Foetal Physiology.
- Genetics.
- Infectious Diseases.
- Reproductive Physiology.
- Surgical Pathology.

1.4. Basic Specialist Qualification

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<th>Qualification</th>
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<tr>
<td>MMed (Obstetrics &amp; Gynaecology)</td>
<td>National University of Singapore</td>
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<td>Or Equivalent</td>
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</table>
2. **Advanced Specialist Training**

2.1. **Training Period**

- 3 years.

2.2. **Postings**

- 3 years in accredited units of Obstetrics and Gynaecology, of which 1 year may be spent in subspecialities of Obstetrics and Gynaecology.

2.3. **Training Contents**

- Mainly in Obstetrics and Gynaecology and their subspecialities.
- To a lesser extent, in closely related disciplines such as Endocrinology, Urology or Oncology.

2.4. **Exit Specialist Qualification**

<table>
<thead>
<tr>
<th>Qualification</th>
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<tr>
<td>FAMS (Obstetrics &amp; Gynaecology)</td>
<td>Academy of Medicine, Singapore</td>
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</table>
SPECIALITY NO. 20

OCCUPATIONAL MEDICINE

1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- Year 1 – General Clinical Experience.
- Year 2 – Occupational Medicine or Public Health Medicine Practice in Institutional, Industrial and Other Approved Settings (e.g. Armed Forces, Government, Industry, University).
- Year 3 – Full Time Master Degree Course in Occupational Medicine.

1.3. Training Contents

- General Clinical Experience – preferably in General Medicine, General Surgery, Paediatrics, Obstetrics and Gynaecology, Emergency Medicine, and Family Health Service.
- Experience in Various Aspects of Occupational Medicine or Public Health Medicine in Institutional or Private Occupational Health Care Practice.
- All Modules of the Full Time MMed (Occupational Medicine) Course or the Equivalent.

1.4. Basic Specialist Qualification

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<th>Qualification</th>
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<tr>
<td>MMed (Occupational Medicine)</td>
<td>National University of Singapore</td>
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</table>

2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years of Occupational Medicine Practice in Institutional, Industrial and Other Approved Settings (e.g. Armed Forces, Government, Industry, University).

2.3. Training Contents

- Assessment and Control of Hazards in the Work Environment.
- Ergonomics.
- Epidemiology and Statistics as Applied in Occupational Health.
- Ethics as Applied to Occupational Medicine.
- Functions and Responsibilities of Management, Trade Unions and Related Legislation.
- Health and Fitness to Work, Diseases and Injuries of Occupations.
- Health Education and Promotion at the Workplace.
- Health Surveillance and Biological Monitoring.
- Impact of Industry on the Community and the Relationship between Community Health, Environmental Health and Other Social Services.
- Physiology and Psychology of Work.
- Sources of Information on Occupational Health and Safety.
- Structure, Organisation and Management of Occupational Health Services.
- Structure and Workings of Industry.
- Systems of Compensation for Occupational Diseases and Injury.
- Toxicology and Occupational Hygiene.

2.4. Exit Specialist Qualification

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</table>
SPECIALITY NO. 21

OPHTHALMOLOGY

1. Basic Specialist Training

1.1. Training Period

• 3 years.

1.2. Postings

• At least 2 years in accredited units of Ophthalmology.
• The other 1 year in accredited units of Ophthalmology or 2 (6-monthly postings) of the following disciplines:
  – Emergency Medicine.
  – Internal Medicine.
  – Neurology.
  – Neurosurgery.
  – Otorhinolaryngology.
  – Plastic Surgery.

1.3. Training Contents

• Cataract Extraction with Intraocular Implants.
• Computerised Tomography Interpretation.
• Contact Lens Fitting.
• Corneoscleral Laceration Repair.
• Cosmetic Lid Surgery.
• Enucleation.
• Fluorescein Angiography.
• Glaucoma Filtration Surgery.
• Keratorefraction Procedures.
• Laser (Retina).
• Magnetic Resonance Imaging Interpretation.
• Ophthalmic Pathology.
• Orbital Fracture Repair.
• Orbitotomy.
• Penetrating Keratoplasty.
• Perimetry Evaluation.
• Posterior Vitrectomy.
• Ptosis Repair.
• Refraction.
• Scleral Buckling.
• Strabismus Surgery.

1.4. Basic Specialist Qualification

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</table>

2. Advanced Specialist Training

2.1. Training Period

• 3 years.

2.2. Postings

• 3 years in accredited units of Ophthalmology, including subspecialties of Ophthalmology:
  – Cornea.
  – Glaucoma.
  – Oculoplastic.
  – Paediatric Ophthalmology.
  – Vitreo-retinal.

2.3. Training Contents

• Contact Lens.
• Cornea.
• External Eye.
• Glaucoma.
• Implant Surgery.
• Neuro-Ophthalmology.
• Oculoplastic.
• Paediatric Ophthalmology.
• Vitreo-retinal.
• Others (e.g. Ocular Immunology and Uveitis).
### 2.4. Exit Specialist Qualification

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</table>
SPECIALITY NO. 22

ORTHOPAEDIC SURGERY

1. Basic Specialist Training
   • To complete Basic Specialist Training in Surgery.

2. Advanced Specialist Training

   2.1. Training Period
       • 3 years.

   2.2. Postings
       • 3 years in accredited units of Orthopaedic Surgery.

   2.3. Training Contents:

       2.3.1. Theoretical Knowledge

       • **Basic Science** with instructions in anatomy, biochemistry, biomaterials, biomechanics, microbiology, pharmacology, pathology and physiology, and other basic sciences related to Orthopaedic Surgery.

       • **Anatomic Areas** including all aspects of diagnosis and care of disorders affecting the bones, joints and soft tissues of the upper and lower extremities, including the hand and foot; the entire spine and the bony pelvis.

       • **Acute and Chronic Care**, operative and non-operative, of acute trauma including athletic injuries, infectious diseases, neurovascular impairment, and chronic orthopaedic problems including reconstructive surgery, neuromuscular disease, metabolic disease, benign and malignant tumours, and rehabilitation.

       • **Children’s Orthopaedics** including common congenital conditions, injuries, neuromuscular disorders, and rehabilitation modalities including those for the disabled.

       • **Related Clinical Subjects** such as musculoskeletal imaging procedures, use and interpretation of clinical laboratory tests,
prosthetics, orthotics, physical modalities and exercises, and neurological and rheumatological disorders.

2.3.2. Surgical Skills

- **Incisions** including arthrotomy, soft tissue biopsy, abscess drainage, entrapment syndrome releases, emergency spinal decompression, diagnostic and therapeutic arthroscopies.
- **Excisions** including synovectomy, meniscectomy, sequestrectomy, tumours of bone and soft tissues.
- **Introduction or Removal** such as foreign body removal, steroid and antibiotic injections, insertion of skeletal pins and wires.
- **Repair, Revision or Reconstruction** such as arthroplasty, osteotomy, tenodesis, capsulorrhaphy, repair of non-union with or without bone graft, joint replacement.
- **Fracture and Dislocation** including open reduction, internal or external fixation, closed reductions of fractures and dislocations.
- **Manipulation** of joints such as knee or shoulder under anaesthesia.
- **Arthrodesis** of any joint by a variety of techniques.
- **Amputations** at any level.
- **Miscellaneous** procedures not included above which may be added from time to time.

2.4. Exit Specialist Qualification

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<th>Qualification</th>
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<td>FAMS (Orthopaedic Surgery)</td>
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</tbody>
</table>
1. Basic Specialist Training

1.1. Training Period:

- 3 years.

1.2. Postings

- 6 months in accredited units of General Surgery.
- 6 months in accredited units of Emergency Medicine or Orthopaedic Surgery.
- 6 months in accredited units of other surgical specialities.
- 18 months in accredited units of Otorhinolaryngology (12 months must be completed in the last year).

1.3. Training Contents

- The training contents are the requirements of the MMed (Surgery) Examination, with more emphasis on Otorhinolaryngology.

1.4. Basic Specialist Qualification

<table>
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<td>MMed (Surgery)*</td>
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*Pending MMed (Otorhinolaryngology).
2. **Advanced Specialist Training**

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in accredited units of Otorhinolaryngology.

2.3. Training Contents

- The training contents are the requirements of the Royal College of Surgeons of Edinburgh Otorhinolaryngology Exit Examination.

2.4. Exit Specialist Qualification

<table>
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<td>Academy of Medicine, Singapore</td>
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</table>
1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- 12 months in accredited units of General Paediatric Medicine.
- 6 months in accredited units of Neonatology.
- 18 months in accredited units of General Paediatric Medicine, Neonatology, Paediatric Emergency Medicine (maximum 6 months) and one of the following disciplines (maximum 6 months):
  - General Emergency Medicine.
  - Internal Medicine.
  - Obstetrics and Gynaecology.
  - Paediatric Surgery.
  - Primary Health.

1.3. Training Contents

- Adolescent Medicine.
- Ambulatory Paediatrics.
- Neonatology.
- Paediatric Emergency Medicine.
- Paediatric Critical Care.
- Paediatric Medicine.
- Paediatric Surgical Conditions.
- Perinatal Medicine.
- Preventive Paediatrics.

1.4. Basic Specialist Qualification

<table>
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<tr>
<th>Qualification</th>
<th>Conferring Institution</th>
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<tbody>
<tr>
<td>MMed (Paediatrics)</td>
<td>National University of Singapore</td>
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</tr>
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</table>
2. **Advanced Specialist Training**

2.1. **Training Period**

- 3 years.

2.2. **Postings**

- 12 months in accredited units of General Paediatric Medicine.
- 6 months in accredited units of Neonatology.
- 18 months in subspecialities of Paediatric Medicine and/or Neonatology, of which a maximum of 12 months may be spent in accredited units of Paediatric Emergency Medicine.

2.3. **Training Contents**

- General Paediatric Medicine.
- Subspecialities of Paediatric Medicine, including Neonatology.

2.4. **Exit Specialist Qualification**

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Conferring Institution</th>
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</thead>
<tbody>
<tr>
<td>FAMS (Paediatric Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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<tr>
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</tbody>
</table>
SPECIALITY NO. 25

PAEDIATRIC SURGERY

1. Basic Specialist Training
   • To complete Basic Specialist Training in General Surgery.

2. Advanced Specialist Training

   2.1. Training Period
       • 4 years.

   2.2. Postings
       • 4 years in accredited units of Paediatric Surgery.

   2.3. Training Contents
       • Advanced Paediatric Resuscitation Course.
       • Basic Laparoscopy Training.
       • Basic Laser Training.
       • Neonatal Surgery.
       • Upper and Lower Gastrointestinal Endoscopy.
       • Paediatric Gastrointestinal Surgery.
       • Paediatric Head and Neck Surgery.
       • Paediatric Hepatobiliary Surgery.
       • Paediatric Intensive Care.
       • Paediatric Oncology Surgery.
       • Paediatric Thoracic Surgery.
       • Paediatric Trauma Surgery.
       • Paediatric Urology.
       • Reconstructive Surgery for Congenital Malformations.

   2.4. Exit Specialist Qualification

<table>
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<tbody>
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<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>

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SPECIALITY NO. 26

PATHOLOGY

1. Basic Specialist Training

1.1. Training Period

• 3 years.

1.2. Postings

• 3 years in accredited units of Pathology.

1.3. Training Contents

• Should have a sound knowledge of the Mechanism of Diseases and Pathophysiological Concepts.
• Participate in regular Clinico-Pathological Meetings.
• Attain a certain expertise in the chosen speciality of Pathology before proceeding to the Part II Examination.
• Attain knowledge of Laboratory Safety Precautions.
• Should satisfy all the requirements of the respective Examinations.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>DMJ (Pathology)*</td>
<td>Society of Apothecaries of London</td>
</tr>
<tr>
<td>FRCPA (Part I)</td>
<td>Royal College of Pathologists of Australasia</td>
</tr>
<tr>
<td>MRCPath (Part I)</td>
<td>Royal College of Pathologists, UK</td>
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<tr>
<td>Or Equivalent</td>
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</tbody>
</table>

* For trainees in Forensic Pathology only.
2. **Advanced Specialist Training**

2.1. **Training Period**

- Minimum 2 years.

2.2. **Postings**

- 2 years in accredited units of Pathology.

2.3. **Training Contents**

- Anatomical Pathology / Histopathology.
- Chemical Pathology.
- Forensic Pathology.
- General Pathology.
- Immunology.
- Medical Microbiology.

2.4. **Exit Specialist Qualification**

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>FAMS (Pathology)</td>
<td>Academy of Medicine, Singapore</td>
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Note: For the award of FAMS (Pathology), trainees are required to first obtain FRCPA or MRCPath, or the equivalent, except trainees in Forensic Pathology who have obtained DMJ (Pathology). The latter who have not obtained FRCPA or MRCPath in Forensic Pathology will have to sit for a formal exit examination conducted by the Academy of Medicine, Singapore.
1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Surgery.

2. **Advanced Specialist Training**

   2.1. **Training Period**
   - 4 years.

   2.2. **Postings**
   - At least 42 months in accredited units of Plastic Surgery.
   - The other 6 months in accredited units of Plastic Surgery or Hand Surgery or other related disciplines.

   2.3. **Training Contents**
   - All Aspects of Aesthetic Surgery.
   - All Aspects of Amputation.
   - Basic Sciences related to Plastic Surgery, including Embryology, Surgical Anatomy and Physiology.
   - Block Dissection of Lymph Nodes, Radical Neck Dissection.
   - Cleft Lip and Cleft Palate and Craniofacial Anomalies – All Aspects of Management.
   - Excisional and Reparative Surgery involved in the Treatment of Skin Cancers and Tumours of the Face, Neck and Intraoral Region.
   - Management of Burns and their Complications.
   - Management of Head and Neck Cancers including all Aspects of Resection and Reconstruction.
   - Management of Lymphoedema and Post Irradiation Problems.
   - Management of Maxillo-Facial Trauma including the Mandible.
   - Management of Pressure Sores and Chronic Ulcers.
   - Management of Soft Tissue Injuries.
• Microsurgery – Basic Techniques and Applications.
• Principles and Practice of Tissue Culture and Transplantation.
• Principles of Laser Surgery and their Clinical Applications.
• Principles of Tissue Expansion and their Clinical Applications.
• Principles of Various Types of Flaps.
• Reconstructive Surgery of the Breast.
• Skin Grafts and Other Types of Free Grafts.
• Wound Healing and Dressing Techniques.

2.4. Exit Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
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</tbody>
</table>
1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- At least 24 months in accredited units of Psychiatry.
- 6 months in accredited unit of General Internal Medicine.
- The other 6 months in accredited units of Psychiatry or Neurology.

1.3. Training Contents

- Basic Neurosciences and Behavioural Sciences.
- Child and Adolescent Psychiatry.
- Community Psychiatry.
- Forensic Psychiatry.
- General Psychiatry.
- Internal Medicine.
- Liaison Psychiatry.
- Mental Handicap.
- Neurology.
- Psychiatry of Old Age.
- Rehabilitation.
- Substance Abuse.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>MMed (Psychiatry)</td>
<td>National University of Singapore</td>
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<td>Or Equivalent</td>
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</tbody>
</table>
2. Advanced Specialist Training

2.1. Training Period

• 3 years.

2.2. Postings

• At least 12 months in accredited units of General Psychiatry (Acute Psychiatry).
• At least 12 months in accredited units of 2 (6-monthly postings) of the following subspecialities of Psychiatry:
  – Child and Adolescent Psychiatry.
  – Forensic Psychiatry.
  – Mental Handicap.
  – Military Psychiatry.
  – Liaison Psychiatry.
  – Psychiatry of Old Age.
  – Rehabilitation.
  – Substance Abuse.
  – Any other areas where the institution has special interests.
• The other 12 months in accredited units of General Psychiatry or 2 (6-monthly postings) of the above subspecialities of Psychiatry.

2.3. Training Contents

• Child and Adolescent Psychiatry.
• Community Psychiatry.
• Forensic Psychiatry.
• General Psychiatry.
• Liaison Psychiatry.
• Mental Handicap.
• Psychiatry of Old Age.
• Rehabilitation.
• Substance Abuse.

2.4. Exit Specialist Qualification

<table>
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<td>Academy of Medicine, Singapore</td>
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<td>Or Equivalent</td>
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</tbody>
</table>

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1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- Year 1  – General Clinical Experience in Institutional Practice.
- Year 2  – Full Time Public Health Experience in Institutional Practice.
- Year 3  – Full Time Master Degree Course in Public Health.

1.3. Training Contents

- General Clinical Experience, preferably in General Medicine, General Surgery, Paediatrics, Obstetrics and Gynaecology, Emergency Medicine, and Family Health Service.
- Experience in Various Aspects of Institutional Public Health Practice:
  - Environmental Health.
  - Epidemiology and Disease Control.
  - Family Health Service.
  - Food and Nutrition.
  - Health Education & Promotion.
  - Health Care for the Elderly.
  - Health Policy and Planning.
  - Hospital and Health Administration.
  - Maternal and Child Health.
  - Quality Assurance and Medical Audit.
  - School Health.
- All Modules of the Full Time MMed (Public Health) Course or the Equivalent.
1.4. Basic Specialist Qualification

<table>
<thead>
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<th>Qualification</th>
<th>Conferring Institution</th>
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<td>National University of Singapore</td>
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2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years in Institutional Public Health Practice (e.g. Armed Forces, Government, University).

2.3. Training Contents

- Epidemiology and Disease Control.
- Family Health Service.
- Food and Nutrition.
- Health Education & Promotion.
- Health Care for the Elderly.
- Health Policy and Planning.
- Hospital and Health Administration.
- Maternal and Child Health.
- Quality Assurance and Medical Audit.
- School Health.

2.4. Exit Specialist Qualification

<table>
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<th>Qualification</th>
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<td>Academy of Medicine, Singapore</td>
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</table>
1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Internal Medicine.

2. **Advanced Specialist Training**
   
   2.1. **Training Period**
   - 3 years.

   2.2. **Postings**
   - 3 years in accredited units of Rehabilitation Medicine.

   2.3. **Training Contents**

   2.3.1. **Core Training**
   - Cardiopulmonary Rehabilitation.
   - Musculoskeletal Rehabilitation.
   - Neuro-Rehabilitation (stroke, brain injury and disabling neurological conditions).
   - Spinal Rehabilitation.

   2.3.2. **Elective Training**
   - Amputee Rehabilitation.
   - Burns Rehabilitation.
   - Cancer Rehabilitation.
   - Geriatric Rehabilitation.
   - Occupational Rehabilitation.
   - Paediatric Rehabilitation.
   - Pain Management.
   - Sports Injuries Rehabilitation.
2.4. Exit Specialist Qualification

<table>
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<td>FAMS (Rehabilitation Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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</table>
SPECIALITY NO. 31

RENAL MEDICINE

1. Basic Specialist Training
   • To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

2.1. Training Period
   • 3 years.

2.2. Postings
   • 3 years in accredited units of Renal Medicine, with at least 6 months of training in each of the following:
     – Clinical Nephrology.
     – Continuous Ambulatory Peritoneal Dialysis.
     – Haemodialysis.
     – Transplantation.

2.3. Training Contents
   • Diagnosis and Co-operative Management of Urological Problems.
   • Diagnosis and Therapy of Fluid and Electrolyte Problems.
   • Diagnosis of Renal Disease.
   • Management of Acute Renal Failure.
   • Management of End-Stage Renal Disease.
   • Management of Hypertension.
   • Renal Biopsy and its Interpretation.
   • Renal Transplantation.
   • Techniques of Haemodialysis and Peritoneal Dialysis.

2.4. Exit Specialist Qualification

<table>
<thead>
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<td>FAMS (Renal Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>
1. **Basic Specialist Training**
   - To complete Basic Specialist Training in Internal Medicine.

2. **Advanced Specialist Training**

   2.1. **Training Period**
   - 3 years.

   2.2. **Postings**
   - 3 years in accredited units of Respiratory Medicine, of which $\frac{1}{2}$ year should be spent in Critical Care (1 year for those intending to subspecialise in Critical Care).

   2.3. **Training Contents**

   2.3.1. **General Training**
   - Instruction in the Basic Sciences related to Respiratory Disease.
   - Acquire Knowledge of and have Clinical Experience with a Broad Spectrum of Pulmonary Diseases, including:
     - Acute Lung Injury.
     - Diffuse Interstitial Lung Diseases.
     - Disorders of the Pleura and the Mediastinum.
     - Obstructive Lung Diseases.
     - Occupational and Environmental Lung Diseases.
     - Pulmonary Infections.
     - Pulmonary Malignancies.
     - Pulmonary Manifestations of Systemic Diseases.
     - Pulmonary Vascular Diseases.
     - Respiratory Failure.
     - Sleep Disorders.
• Acquire Knowledge of and Competence in Performing:
  – Diagnostic and Therapeutic Procedures.
  – Endobronchial Laser Therapy.
  – Pulmonary Function Tests and Sleep Studies.
  – Ventilatory Support and Techniques.
• Acquire Knowledge of and Ability to Interpret Respiratory Imaging Procedures.
• Develop Expertise in Monitoring, Supervising Respiratory Physical Therapy and Rehabilitation.

2.3.2. Critical Care Training

• Acquire Knowledge of, and Competence in Performing:
  – Airway Management.
  – Maintenance of Circulation.
  – Diagnostic and Therapeutic Procedures.
  – Calibration and Operation of Haemodynamic Recording Systems.
• Acquire Knowledge of, and to Develop Clinical Competence in the following Curriculum of Critical Care Medicine:
  – Iatrogenic and Nosocomial Problems in Critical Care Medicine
  – Management of Anaphylaxis and Acute Allergic Reactions.
  – Management of Immunosuppressed Patient.
  – Parental Nutrition.
  – Psychosocial and Emotional Effects of Critical Illnesses.
• Learn the Indications, Contraindications, Limitations and Complications of the following Procedures, with Practical Experience:
  – Endobronchial Laser Therapy.
  – Intracranial Pressure Monitoring
  – Percutaneous Needle Aspiration and Cutting Lung Biopsy.
  – Pericardiocentesis.
  – Peritoneal Dialysis.
  – Peritoneal Lavage.
  – Transverse Pacemaker Insertion.

2.4. Exit Specialist Qualification

<table>
<thead>
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<th>Qualification</th>
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<tbody>
<tr>
<td>FAMS (Respiratory Medicine)</td>
<td>Academy of Medicine, Singapore</td>
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</tbody>
</table>

69
1. Basic Specialist Training
   - To complete Basic Specialist Training in Internal Medicine.

2. Advanced Specialist Training

   2.1. Training Period
   - 3 years.

   2.2. Postings
   - At least 30 months in accredited units of Clinical Rheumatology, of which up to 6 months may be spent in Clinical Diagnostic or Laboratory Research.
   - At least 3 months of Clinical Immunology Training.
   - Optional 3 months of training in a related discipline.

   2.3. Training Contents

   2.3.1. Clinical Rheumatology
   - Outpatient.
   - Inpatient.
   - Referrals.

   2.3.2. Procedures
   - Conversant with Practical Procedures used in Rheumatology Practice.
   - Conversant with Laboratory Techniques and Interpretation.
   - Conversant with the use and Interpretation of Imaging Techniques in Rheumatology.
   - Understanding of Rheumatology Rehabilitation, Physical Therapy and Occupational Therapy.
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<td>FAMS (Rheumatology)</td>
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</tbody>
</table>
1. Basic Specialist Training

1.1. Training Period

- 3 years.

1.2. Postings

- Year 1 and 2 - General Clinical Training.
- Year 3 - In accredited units of Therapeutic Radiology.

1.3. Training Contents

- Basic Sciences of Cancer.
- Clinical Work in Radiotherapy and Oncology.
- Medical Statistics.
- Pathology.
- Physics.

1.4. Basic Specialist Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
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<tbody>
<tr>
<td>FRCR (Clinical Oncology) (Part I) (UK)</td>
<td>Royal College of Radiologists, UK</td>
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</table>

Note: From Oct 2000 onward, trainees will also be required to obtain MMed (Internal Medicine) / MRCP (UK) before taking FRCR (Clinical Oncology) (Part I) (UK) Examination.
2. Advanced Specialist Training

2.1. Training Period

- 3 years.

2.2. Postings

- 3 years post-FRCR (Clinical Oncology) (Part I) (UK) experience in accredited units of Therapeutic Radiology, of which 1 year must be spent after obtaining FRCR (Clinical Oncology).

2.3. Training Contents

- Management of Patients undergoing Chemotherapy or Hormonotherapy.
- Practical Training in Radiotherapy and Oncology related to Specific Tumours.
- First Year Post-FRCR (Clinical Oncology) (UK):
  - Personally Investigate and Treat Common Malignancies
  - Attend the Relevant Postgraduate Lectures, Courses and Conferences
  - Investigations and Treatment of the following Groups of Malignancies:
    (a) Breast.
    (b) Central Nervous System.
    (c) Gastrointestinal.
    (d) Gynaecological.
    (e) Head and neck.
    (f) Lymphomas.
    (g) Thoracic.
    (h) Urological.
    (i) Others.

2.4. Exit Specialist Qualification

<table>
<thead>
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<tbody>
<tr>
<td>FAMS (Therapeutic Radiology)</td>
<td>Academy of Medicine, Singapore</td>
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</table>

Note: For the award of FAMS (Therapeutic Radiology), trainees are required to first obtain FRCR (Clinical Oncology) (UK) or the equivalent.
1. Basic Specialist Training
   • To complete Basic Specialist Training in Surgery.

2. Advanced Specialist Training

   2.1. Training Period
   • 4 years (3 years if the trainee has obtained exemption under 2.2.).

   2.2. Postings
   • 1 year in an accredited unit of General Surgery (may be exempted if the trainee has spent at least 1 year in General Surgery after obtaining the relevant basic specialist qualification).
   • 3 years in an accredited unit of Urology.

   2.3. Training Contents
   • Diagnostic Endoscopic Procedures (e.g. cystoscopy, retrograde ureteric catheterisation).
   • Therapeutic Endoscopic Procedures of Lower Urinary Tract (e.g. transurethral resection of prostates and bladder tumours).
   • Advanced Endoscopic Procedures of Upper Urinary Tract.
   • Open Operative Procedures:
     – Simple procedures such as suprapubic cystostomy, ureterolithotomy.
     – Major procedures such as extended pyelolithotomy and radical nephrectomy.
     – Radical procedures for uro-oncology and reconstructive urology.
   • Urodynamics and Urological Ultrasound.
2.4. Exit Specialist Qualification

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### LIST OF SPECIALITIES
IN THE REGISTER OF SPECIALISTS

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<td>Anaesthesiology</td>
<td>Anaesthesiologist</td>
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<td>2</td>
<td>Cardiology</td>
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<tr>
<td>3</td>
<td>Cardiac Surgery</td>
<td>Cardiothoracic Surgeon</td>
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<td>4</td>
<td>Dermatology</td>
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<td>5</td>
<td>Diagnostic Radiology</td>
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<td>6</td>
<td>Emergency Medicine</td>
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<td>33</td>
<td>Rheumatology</td>
<td>Rheumatologist</td>
</tr>
<tr>
<td>34</td>
<td>Therapeutic Radiology</td>
<td>Therapeutic Radiologist</td>
</tr>
<tr>
<td>35</td>
<td>Urology</td>
<td>Urologist</td>
</tr>
</tbody>
</table>
### ANNEX B

SPECIALIST TRAINING PROGRAMMES IN SINGAPORE
APPROVED FOR THE PURPOSES OF
SPECIALIST ACCREDITATION AND REGISTRATION

<table>
<thead>
<tr>
<th>Speciality</th>
<th>Programme Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic &amp; Advanced Specialist Training Programmes</strong></td>
<td></td>
</tr>
<tr>
<td>1. Anaesthesiology</td>
<td>GSMS</td>
</tr>
<tr>
<td>2. Diagnostic Radiology</td>
<td>GSMS</td>
</tr>
<tr>
<td>3. General Surgery</td>
<td>GSMS</td>
</tr>
<tr>
<td>(Basic Specialist Training in Surgery common to surgical disciplines)</td>
<td></td>
</tr>
<tr>
<td>4. Internal Medicine</td>
<td>GSMS</td>
</tr>
<tr>
<td>(Basic Specialist Training in Internal Medicine common to medical disciplines)</td>
<td></td>
</tr>
<tr>
<td>5. Obstetrics &amp; Gynaecology</td>
<td>GSMS</td>
</tr>
<tr>
<td>6. Occupational Medicine</td>
<td>GSMS</td>
</tr>
<tr>
<td>7. Ophthalmology</td>
<td>GSMS</td>
</tr>
<tr>
<td>8. Paediatric Medicine</td>
<td>GSMS</td>
</tr>
<tr>
<td>9. Psychiatry</td>
<td>GSMS</td>
</tr>
<tr>
<td>10. Public Health Medicine</td>
<td>GSMS</td>
</tr>
<tr>
<td>11. Emergency Medicine</td>
<td>AM</td>
</tr>
<tr>
<td>12. Nuclear Medicine</td>
<td>AM</td>
</tr>
<tr>
<td>13. Otorhinolaryngology / Ear Nose Throat (ENT) Surgery</td>
<td>AM</td>
</tr>
<tr>
<td>14. Pathology</td>
<td>AM</td>
</tr>
<tr>
<td>15. Therapeutic Radiology</td>
<td>AM</td>
</tr>
</tbody>
</table>

**Advanced Specialist Training Programmes**

(Medical Disciplines)

| 16. Cardiology                                | AM                     |
| 17. Dermatology                               | AM                     |
| 18. Endocrinology                             | AM                     |
| 19. Gastroenterology                          | AM                     |
| 20. Geriatric Medicine                        | AM                     |
| 21. Haematology                               | AM                     |
| 22. Infectious Diseases                       | AM                     |
| 23. Medical Oncology                          | AM                     |
| 24. Neurology                                 | AM                     |
| 25. Rehabilitation Medicine                  | AM                     |
| 26. Renal Medicine                            | AM                     |
| 27. Respiratory Medicine                      | AM                     |
| 28. Rheumatology                              | AM                     |

(Surgical Disciplines)

| 29. Cardiothoracic Surgery                    | AM                     |
| 30. Hand Surgery                              | AM                     |
| 31. Neurosurgery                              | AM                     |
| 32. Orthopaedic Surgery                       | AM                     |
| 33. Paediatric Surgery                        | AM                     |
| 34. Plastic Surgery                           | AM                     |
| 35. Urology                                   | AM                     |

*GSMS = Graduate School of Medical Studies, National University of Singapore*

*AM = Academy of Medicine, Singapore*