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OMSB CURRICULUM GENERAL INTERNAL MEDICINE

INTRODUCTION:

The OMSB-IM is 4-year training program developed in order to produce knowledgeable, skillful, compassionate and responsible physicians in the specialty of internal medicine.

Key features of the program are set out below:

- Residents will take responsibilities for their own learning and take advantage of all the learning opportunities presented within the day-to-day work of each attachment.
- Competence and performance will be objectively assessed throughout the Program.
- The Program will inspire in doctors the need for continuous professional development and lifelong learning.

The program offers training at Royal Hospital, Sultan Qaboos University Hospital, Armed Forces Hospital, and Bowsher Polyclinic, and additional training is arranged in the form of electives at other sites, as approved by the program director and the scientific committee.

ENTRY REQUIREMENTS:

Residents are accepted in the program annually by invited application and interview process. The residents must be eligible as per the criteria set out by the OMSB by-laws.

MISSION/VISION STATEMENT

The primary mission of the Scientific Committee of OMSB Internal Medicine Residency Program is to provide Omani Doctors to attain the knowledge, skills and attitudes to become competent internists who are committed to provide to their patients the highest ethical and professional standards of Internal Medicine.

Residents will be prepared to provide compassionate, respectful, patient-centered, cost-effective, services in the setting of practice.

Through direct observation and feedback from trainers, Residents will be prepared to practice the fundamentals of patient care. Over time, residents should be able to develop the skills of self-assessment and reflective practice in order to improve their own skills throughout their career.

Upon the completion of the residency program, residents will be fully prepared as general interests, and will be encouraged to promote their career, either in general internal medicine or the subspecialties of internal medicine.

PROGRAM OBJECTIVES

GENERAL INTERNAL MEDICINE ROTATION

A general internist is a specialist trained in diagnosis and management of a wide range of disease in adult patients, involving all organ systems, and particularly skilled in the management of patients who have undifferentiated or multi-system disease processes. A General Internist is focused on a holistic approach, by integration the care of multiple conditions in one individual.

GENERAL OBJECTIVES:

The resident must acquire the knowledge, attitude, and skills common to all general internal medicine practice, in order to provide comprehensive care of an adult patient as a whole. He/she must be competent in the diagnosis, investigation, and treatment as well as ongoing care of the patients seen, including cases with:

1. Multi-system disease in the acute care setting.
2. Acute illness not yet diagnosed to be within one organ system (e.g. respiratory failure)
3. Chronic disease management in patients with multiple comorbidities, in an acute or ambulatory care settings.
4. Undifferentiated symptoms in the ambulatory care settings.
5. Common medical problems (both acute and ambulatory settings).
6. Highly acute illness with the disease of one organ system complicated by comorbidities.
7. Less common medical problems involving multiple systems (e.g. porphyria)

SPECIFIC OBJECTIVES:

GENERAL INTERNIST

1. **Medical Expert** should be able to:
 - a. Function effectively as consultant
 - b. Establish and maintain the medical knowledge, skills, and attitudes appropriate to his/her practice.
 - c. Perform a complete and appropriate assessment of the patient
 - d. Use preventive and therapeutic interventions effectively.
 - e. Show proficient and appropriate use of skills and procedures in both diagnostic and treatment.
 - f. Recognize his/her own limits and seek appropriate consultation from other health professionals.

Competences of a Medical Expert:

1. Demonstrate expertise in the diagnosis, investigation, and management of a general internal medicine patient.
2. Demonstrate expertise in the differential diagnosis of patients presenting with undifferentiated symptoms or an acute illness of unknown etiology.
3. Demonstrate the ability to maintain up-to-date knowledge of internal medicine and to apply it to the patient care.

4. Demonstrate expertise in peri-operative care, including risk assessment and stratification, risk modification, and post-operative medical management.
 5. Demonstrate expertise in the management of medical problems in pregnancy, e.g. (but not only limited to) asthma.
 6. Recognize drug interactions and side effects.
 7. Apply knowledge and technical expertise in performing procedures, interpreting the results and understanding the limitations and complications of those procedures:
 - a. Central venous catheter insertion.
 - b. Lumbar puncture.
 - c. Peripheral arterial catheter insertion.
 - d. Abdominal paracentesis.
 - e. Endotracheal intubation.
 - f. Thoracentesis.
 - g. Knee joint aspiration.
 - h. ECG interpretation.
 8. Describe indications, contraindications, potential risks and complications, available alternatives; interpret the results; ensure adequate follow-up for the following:
 - a. Ambulatory blood pressure monitoring
 - b. Exercise stress testing, including nuclear tests
 - c. Hemodynamic monitoring
 - d. Temporary pacemaker insertion
 - e. Ambulatory ECG monitoring
 - f. Elective cardioversion
 - g. Transthoracic pacing
 - h. Echocardiography
 - i. Chest tube insertion
 - j. Pulmonary function testing
 - k. Overnight oximetry
 - l. Mechanical ventilation
 - m. Endoscopic procedures (OGD, colonoscopy, sigmoidoscopy, bronchoscopy)
 - n. Bone marrow aspiration and biopsy
 - o. Skin biopsy
 - p. Joint aspiration and injection
 - q. Hemodialysis and peritoneal dialysis
 - r. Renal biopsy
 - s. Thyroid biopsy
 - t. Liver biopsy
 - u. Pleural biopsy
2. Competences of a **Communicator**:
- a. Provide clear, concise, and timely verbal and written communication to other specialties and/or subspecialties involved in the management of a general internal medicine patient.
 - b. Discuss the risk and benefit of diagnostic and therapeutic options in patients with multisystem illness, or in the setting of pregnancy or surgery.

- c. Define the role of a consultant versus a primary caregiver when involved in the care of surgical or gynecological/obstetrical patients.
 - d. Develop and maintain rapport, trust, and ethical relationships with patients and their families.
 - e. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals.
 - f. Accurately convey relevant information and explanation to the patients and their families, colleagues, and other professionals.
3. Competences of a **Manager**:
- a. Coordinate multiple diagnostic and therapeutic interventions.
 - b. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life.
 - c. Demonstrate understanding of human resource, financial and record-keeping issues pertaining to running a medical office.
 - d. Demonstrate ability to manage patient care information obtained in both acute and ambulatory care settings and ensure appropriate and timely follow-up.
 - e. Employ information technology appropriately for the patient care.
 - f. Evaluate need for intervention, investigation, and specific treatment in terminal patients.
 - g. Implement processes to ensure personal practice improvement.
 - h. Participate in systemic quality process evaluation and improvement.
4. Competences of a **Health Advocate**:
- a. Promote preventive health care (e.g. smoking cessation, treatment of dyslipidemia, hypertension, obesity, alcoholism, or illicit drug use).
 - b. Implement preventive strategies such as vaccination, cancer screening, and treatment of osteoporosis.
 - c. Identify timely and appropriate care for the general internal medicine patient.
 - d. Promote timely and appropriate care for the general internal medicine patient.
5. Competences of a **Scholar**:
- a. Demonstrate scholarly activity in one or more of the following:
 1. Medical Education.
 2. Research.
 3. Administration.
 - b. Demonstrate ability to formulate focused questions related to practice, and use a variety of search skills and resources to access and appraise the appropriate information.
 - c. Demonstrate effective teaching skills in the knowledge area unique to general internal medicine including CME activity.
 - d. Implement a personal knowledge management system.

6. Competences of a **Professional:**
 - a. Demonstrate a sound understanding of ethical principles and moral values, and apply this to the management of a general internal medicine patient during illness and at the end of life.
 - b. Recognize limitations in skill set and knowledge including knowing when to involve another health care provider.
 - c. Demonstrate ability to set boundaries consistent with safe and effective patient care.
 - d. Participate in finding solutions for the health care needs of the society.

TRAINING STRUCTURE

INTRODUCTION:

The program will provide learning opportunities in various disciplines of internal medicine at various teaching sites, in order to provide exposure to a wide spectrum of clinical disorders.

The disciplines to be covered for the four-year residency program are:

1. Cardiology
2. Critical Care
3. Endocrinology
4. Gastroenterology
5. General Internal Medicine [GIM]
6. Hematology
7. Respiratory
8. Rheumatology
9. Nephrology
10. Neurology
11. Emergency Medicine
12. Infectious Disease
13. Hematology
14. Medical oncology

PROGRAM LAYOUT:

Each academic year is divided into 13 periods and each period is 28 days.

First Year:

8 periods	Wards
2 periods	UCC
1 period	Emergency
1 period	Elective
1 period	Leave

ACLS: Should be done by the candidate before joining or during the first year.

Second Year:

6 periods	Wards
2 periods	UCI
1 period	Emergency
1 period	Clinic
1 period	evitcelE
1 period	hcraseR
1 period	Leave

Residents will be required to take OMSB examination at the end of the second year of training for promotion to next year.

Third Year:

4 periods	Wards as senior resident/team leader
1 period	UCC
1 period	UCI
1 period	ycnegremE
1 period	cinilC
1 period	ygolorueN
2 periods	evitcelE
1 period	hcraseR
1 period	Leave

Fourth Year:

4 periods	Wards as senior resident
1 period	Clinic
6 periods	Elective plus ambulatory care clinic
1 period	Research
1 period	Leave

By the end of the fourth year, a final assessment of the candidate will be done by the program director and decide whether candidate fulfilled the requirements to do the OMSB (internal medicine) part 2.

OUTLINE OF MAJOR AND MINOR ROTATIONS

Major Rotations	<ul style="list-style-type: none">• Ward• CCU• ICU• Emergency Medicine• Clinic (subspecialty and ambulatory care)• Research
Minor Rotations	<p>Electives</p> <p><u>Compulsory Electives</u></p> <ul style="list-style-type: none">• Neurology• Infectious Disease• Respiratory• Gastroenterology• Nephrology• Endocrinology• Cardiology Consult <p><u>Selective Electives</u></p> <ul style="list-style-type: none">• Oncology• Radiology• Hematology• Geriatrics• Rheumatology• Dermatology• Psychiatry

SUPERVISION AND FEEDBACK

Clinical Supervisor:

The program will assign senior physicians to supervise residents at various level of training. The role of the clinical supervisors will be to facilitate an atmosphere conducive for learning, monitoring progression of the resident and providing feedback on identified learning needs.

Responsibilities:

1. To monitor educational supervision, regular appraisal and feedback on the trainees' academic and clinical progress.
2. To facilitate problem solving, and identifying strengths and weaknesses of the trainees.
3. To develop a learning agreement and educational objectives with the trainee, which is mutually agreed and is the point of reference for future appraisal.
4. To ensure that trainees maintain and develop their specialty learning portfolio and participate in the specialty assessment process.
5. To guide trainees through their program, identifying learning and development opportunities.
6. To provide an appropriate role model and mentorship.
7. To ensure that rotation objectives are met.
8. To make sure that master schedule of the specialty is adhered to.

FEEDBACK:

The program requires regular and formal feedback for the residents, the supervisors and the rotations in order to identify its strengths and weaknesses. This information will be utilized for further improvements of the training program.

ASSESSMENT:

The program requires submission of completed resident evaluation form by the assigned clinical supervisor in order for satisfactory completion of a rotation.

Extra-assessment tools may be implemented (such as clinic and A&E evaluation forms) with the approval of the scientific committee.

EXAMINATIONS:

1. End-of-year examination (promotion exam):
 - (contracted from Saudi Commission of Health Specialties)
 - For all levels
2. OMSB Part 1:
 - (contracted from Saudi Commission of Health Specialties)
 - For R2

3. OMSB Part 2 (exit exam):
 - For R4
4. American In-Training Exam:
 - For R2, R3 and R4
5. Arab Board:
 - For all levels
6. MRCP - optional

THE TRAINING PROGRAM SYLLABUS

This section sets out the specific knowledge, skills and attitudes that residents are expected to acquire by the end of the training program. This section is broken down into headings under Generic Skills, core skills for dealing with the acutely ill patient, and specific learning aims, objectives and outcomes from the rotations and modules of the training program

Generic Skills

This section includes the topics of history taking, communication skills, team working, understanding safe and unsafe systems, the principles and practice of clinical governance, the appropriate use of information and evidence to strengthen clinical decisions, skills in information technology, understanding of the need for medical evidence in legal proceedings and recognizing and supporting the diverse needs of patients (i.e. in relation to their religion, disability, age, sexual orientation and other individual factors).

All trainees should be able to meet these objectives. No time scale is offered for these competencies but they must be all attested for by the completion of training. However failure to achieve satisfactory progress in meeting many of these objectives at an early stage would be cause for concern about the resident ability to be adequately trained

The generic skills have been set out in the following headings:

1. good clinical care
 - a. history, examination, investigations, treatment and documentation
 - b. managing chronic disease
 - c. time management and decision making
2. communication skills
3. maintaining good medical practice
 - a. learning
4. maintaining trust
 - a. professional behavior
 - b. ethics and legal issues
 - c. patient education and disease prevention
5. working with colleagues
6. team working and leadership skills
7. teaching
8. research
9. clinical governance
 - a. risk management

- b. evidence, audit and guidelines
- 10. information use in clinical decision making
- 11. cross specialty skills
 - a. admissions and discharges
 - b. discharge planning
 - c. resuscitation
 - d. nutrition

GOOD CLINICAL CARE

A) History, examination and note keeping skills

Aim: to provide the resident with the knowledge, skills and attitudes to be able to take history and examine patients, as well as keep an accurate medical record.

Subject	Knowledge	Skills	Attitude
History	Symptom pattern Alarm symptoms	<ul style="list-style-type: none"> • Identify and synthesize problems • Take a history in difficult circumstances e.g.: When Arabic or English is not the patient's first language, Confused patients, Deaf patients • How to formulate a differential diagnosis 	<ul style="list-style-type: none"> • Recognize the impact of physical problems on psychological and social well being • Show empathy with the patient
Examination	Patterns and physiological basis of physical examination	Explain examination procedure and minimize patient discomfort Elicit signs and use instruments appropriately	Be aware of patient dignity, confidentiality and cultural/ethnic issues. The relatives rights and responsibilities The need for a chaperone
Documentation	Structure of: Medical notes Discharge summaries Outpatient letters	Record accurately and legibly in the medical notes including: History Examination Summary Differential diagnosis Initial investigation and management plan Investigations results and action taken Conversations e.g. between team members and patient/relatives. Date and sign each entry (with time of first contact) Mouse and keyboard skills and ability to use e-mail and internet.	Ensure that notes are accessible to all members of the team and patients/relatives under certain circumstances Recognize the benefits of: Prompt communication with primary care New technology e.g. fax, e-mail etc

B. Time management and decision making

Aim: to provide residents with the knowledge, skills and attitudes and manage time problems effectively

Subject	Knowledge	Skills	Attitudes
Time management	Which patients/tasks take priority	<ul style="list-style-type: none"> • Start with the most important tasks • Work more efficiently as clinical skills develop. • Recognize when he/she is falling behind and re-prioritizes or call for help. 	<ul style="list-style-type: none"> • Have realistic expectations of tasks to be completed by self and others. • Consult and work as part of a team.
Decision making	Clinical priorities for investigation and management	Analyze and manage clinical problems	Be flexible and willing to change

B) Basic life support

Aim: to provide residents with the knowledge, skills and attitudes to perform basic life support

Subject	Knowledge	Skills	Attitudes
Basic life support	Elements of basic life support	<p>How to assess a collapsed patient</p> <p>Maintain an adequate airway and perform effective cardiopulmonary resuscitation</p>	<p>Keep calm</p> <p>Have the ability to enable others to do the same</p>

COMMUNICATION SKILLS

Aim: to provide the resident with the knowledge, skills and attitudes to be able to communicate effectively with patients and colleagues in the circumstances outlined below:

Circumstances	Knowledge	Skills	Attitude
Within a consultation	How to structure the interview to identify the patient's: Concerns/problem list Expectations Understanding Acceptance	Listen Use open questioning followed by appropriate closed questions Avoid jargon and use familiar language Use interpreters appropriately Give clear information and feedback to patients and share information with relatives when appropriate	Recognize the importance of: Involving patients in decisions Offering choices Respecting patients views
Breaking bad news	How to structure the interview and where it should take place Normal bereavement reactions Awareness of organ donation procedure and role of local transplant co-ordinators	Avoid jargon and use familiar language Encourage questions Avoid conveying unrealistic optimism	Act with empathy, honesty and sensitivity
Complaints	Awareness of the local complaints procedure, of the individual, shared and organizational responsibilities	Deal with dissatisfied patients/relatives	Act with honesty and sensitivity

MAINTAINING GOOD MEDICAL PRACTICE

A) Learning

Subject	Knowledge	Skills	Attitudes
Lifelong learning	Define continuing professional development Understand the role of appraisal and of assessment	Recognize and use learning opportunities Maximize the potential of study leave	Be: Eager to learn Willing to learn from colleagues

B) Evidence, audit and guidelines

Aim: to provide residents with the knowledge, skills and attitudes to use evidence, guidelines and audit to benefit patient care

Subject	Knowledge	Skills	Attitude
Evidence based medicine (EBM)	Principles of EBM Types of clinical trials	Critical appraisal of evidence Competent use of databases e.g. Medline, the library and the internet	Keen to use evidence to support patient care
Audit	The audit loop Data sources for audit	Involvement in on-going audit and undertake all aspects of audit cycle Gain informed consent from patients for audit	Recognize the relevance of audit to: Benefit patient care Clinical governance
Guidelines	Problems and benefits of guidelines Methods of determining best practice	Ability to use local guidelines Be involved in guideline generation and evaluation	Recognize individual patient needs when using guidelines

C) Ethics and legal issues

Aim: to provide residents with the knowledge and skills to cope with ethical and legal issues which occur during the management of patients with general medical problems

Subject	Knowledge	Skills	Attitude
Informed consent	Process for gaining informed consent	Give appropriate information in a manner patients understand and be able to consent patients	Recognize the patient's needs as an individual
Confidentiality	Strategies to ensure confidentiality Awareness of the 'Caldicott Guardian'	Use and share all information appropriately Avoid discussing one patient in front of another.	Respect the right of confidentiality
Legal issues particularly those relating to: Death certification Mental illness Advance directives and living wills	Legal responsibilities of completing death certificates	Completion of death certificates. Check whether the patient has an advance directive or living will.	Show attention to detail and recognize pressure of time Respecting living wills and advance directives Act with compassion at all times

MAINTAINING TRUST

A) Professional behavior

Aim: to ensure that trainees develop the knowledge, skills and attitudes to act in a professional manner at all time

Subject	Knowledge	Skills	Attitudes
Continuity of care	Relevance of continuity of care	Ensure satisfactory completion of reasonable tasks at the end of the shift/day with appropriate hand over. Make adequate arrangements to cover leave	Recognize the importance of: Punctuality Attention to detail
Doctor-patient relationship	Aspects of professional relationship	Avoid unnecessary personal comments Ensure all discussion/examination is relevant. Deal with inappropriate behavior in patients, e.g. aggression, violence, sexual harassment	Adopt a non-discriminatory attitude to all patients and recognize their needs as individuals
Recognizes own limitations	Extent of own limitations and when to ask for advice.	Summarize cases and ask relevant questions when seeking advice from others.	Willing to consult and have respect for colleagues.
Stress	The effects of stress	Develop coping mechanisms for stress	Recognize the manifestations of stress on self and others.
Relevance of outside bodies	The relevance of professional life of: OMSB Oman Medical association.		Be open to constructive criticism Accept professional regulation.

B) Patient education and disease prevention

Aim: to provide the resident with knowledge, skills and attitudes to be able to educate patients effectively

Subject	Knowledge	Skills	Attitudes
Educating patients about: Disease Investigations Therapy	Natural history of common diseases Investigation procedure Possible alternatives/choices Strategies to improve adherence to therapies	Ability to give information to patients clearly Encourage questions Negotiate individual treatment plans including action to be taken if patient deteriorates or improves	Involve patients in developing mutually acceptable investigation and treatment plans Encourage patients to access: Further information Patient support groups
Environmental and lifestyle risk factors	Risk factors for disease including: Diet Exercise Social deprivation Occupation Substance abuse	Advice on lifestyle changes Involve other healthcare workers as appropriate	Have a non-judgmental approach
Smoking	Effects of smoking on health Implications of abdication Smoking cessation strategies	Advice on smoking cessation and supportive measures Identify 'ready to quit' smokers	Recognize the importance of support during smoking cessation
Alcohol	Effects of alcohol on health and psycho-social well being,	Advice on drinking cessation	
Epidemiology & screening	Data collection methods and their limitations Notifiable diseases Principles of primary and secondary prevention and screening	Assess an individual patient's risk factors Encourage participation in appropriate disease prevention or screening programmes	Recognize the: Positive & negative aspects of prevention Importance of patient confidentiality Respect patient choices

C) Working with colleagues

Aim: to provide residents with the knowledge, skills and attitude to enable them to work successfully with colleagues

Circumstances	Knowledge	Skills	Attitudes
Interaction between: Members of a team Hospital & family physician Hospital & other agencies e.g. social services	Roles and responsibilities of team members How teams work effectively	Delegate, show leadership and supervise safely Safe handover Should be able to communicate effectively with other team members	Be conscientious Respect colleagues Recognize own limitations

GNINIART DNA GNIHCAET

Aim: to provide residents with the knowledge, skills and attitudes to become life-long learners and teachers

Subject	Knowledge	Skills	Attitudes
Teaching	How adults learn Learner-centered approach		
Formal presentations	Features of an effective presentation	Presentation skills to small groups e.g. journal club Present material in different presentation media	Be confident and not intimidated when presenting Embrace new technology

CROSS SPECIALTY PROBLEMS

Aim: to provide the trainee with the knowledge and skills to be able to deal with medical emergencies.

Subject	Knowledge	Skills
Emergency management	<p>Medical indications for urgent investigation and therapy</p> <p>Skills and capabilities of members of the 'on-call' team</p> <p>When to seek help</p>	<p>Ability to prioritize</p> <p>Effectively interact with other health care professionals</p> <p>Keep patients and relatives informed</p> <p>Receive referrals appropriately</p> <p>Cope with stress</p> <p>Delegate effectively and safely</p> <p>Keep an accurate patient list</p> <p>Hand over safely</p>

DISCHARGE PLANNING

Aim: to provide the resident with the knowledge and skills to be able to plan difficult discharges for patients, particularly those who are elderly

Subject	Knowledge	Skills
Discharge planning	<p>Impact of physical problems on activities of daily living</p> <p>Roles and skills of members of the multidisciplinary team including nurses, physiotherapist, social workers etc</p> <p>Impact of unnecessary hospitalization</p> <p>Family dynamics and socio-economic factors influencing success of discharge</p> <p>Support available in primary care</p>	<p>Recognize when in-patient care is not required</p> <p>Participate in discharge planning</p> <p>Liaison and communication with patient, family and primary care</p> <p>Write reports for appropriate bodies</p>

RESUSCITATION:

Aim: to provide the resident with the knowledge and skills to be able to take part in advanced cardiac life support, feel confident to lead a resuscitation team under supervision and use the local protocol for deciding when not to resuscitate patients.

Subject	Knowledge	Skills
Advanced cardiac life support	Advance cardiac life support algorithms Role and side effects of commonly used anti-arrhythmic and cardiac support drugs	Recognize critically ill patients Recognize cardiac arrhythmias Perform emergency defibrillation Keep calm
Lead a cardiac arrest team	Roles and responsibilities of the team leaders	Safe and effective communication and delegation Keep calm
Do not resuscitate orders (DNR)	Local protocols for DNR orders Legal and ethical considerations	Support patients and families Respect living wills Act with empathy and sensitivity Breaking bad news

NUTRITION:

Aim: to provide the resident with the knowledge and skills in the nutritional issues listed below.

Subject	Knowledge	Skills
Nutritional status	Impact of: Disease on nutritional status Malnutrition on clinical outcomes	Assessment of nutritional status Recognize cultural and religious issues
Nutrition support	Principles and routes of nutrition support Role of nutrition support team	Identify those needing nutrition support or advice Recognize; The skills of others e.g. specialist nurses, pharmacist, and dieticians When to consult nutrition support team

SPECIALTY RELATED TRAINING

The program offers, in addition to the general medical wards, specialty rotations and electives for training in various medical sub-specialties.

The objectives of each of these electives are outlined below.

CARDIOLOGY

The rotation of the resident will be one period a year for total of 4 periods. The residents are expected to take increasingly more supervisory and educational role each successive year.

Objectives:

The residents are expected to utilize the environment of the cardiology unit to gain expertise in managing routine cardiac consultations, cardiac emergencies and pre- and post interventional care of the patients. The residents would have the opportunity to learn skills related to subspecialty. The core knowledge that the residents are expected to gain from the rotation are out lined below:

Coronary Artery Disease:

1. Risk factors of coronary artery diseases and their modification.
2. Management of ST elevation MI including acute, short term and long term plan of care.
3. Management of unstable angina and Non ST elevation MI acute, short term and risk stratification.
4. Indications for coronary angiography in acute coronary syndromes.
5. Path physiology of acute coronary syndrome.
6. Skills: ECG interpretation in acute coronary syndromes.
7. Communication skills with patients and family regarding the management plans, cardiac rehabilitation and art of communication when dealing with a family of a patient with cardiogenic shock.

Heart Failure:

1. Pathophysiology of acute and chronic heart failure.
2. Work up of patient with heart failure.
3. Management of both acute and chronic heart failure.
4. Management options in patients with late stages cardiac failure.
5. Communication skills when dealing with patients' with cardiac failure.

Valvular Heart disease:

1. Pathophysiology of the common valvular heart disease.
2. Workup of the patients with valvular heart disease.
3. Indications for surgical intervention in the common valvular diseases (aortic stenosis, aortic regurgitation, mitral stenosis and mitral regurgitation).

4. Problems associated with prosthetic heart valves.
5. Endocarditis work up and management and indications for surgical intervention.

Cardiac arrhythmias:

1. Acute management of common cardiac tachyarrhythmia like atrial fibrillation, supraventricular tachycardias and ventricular tachycardias.
2. Management of bradyarrhythmias.
3. Indications for temporary pacing and permanent pacing.
4. Familiarity with general indications for ICD.
5. Familiarity with common anti arrhythmic drugs

Pericardial diseases and cardiomyopathies:

1. Knowledge of the diagnosis and management of acute pericarditis
2. Knowledge of causes and clinical presentation of cardiac tamponade and pericardiocentesis.
3. Knowledge of the common cardiomyopathies and their management.

Practical skills:

1. Perform and interpret 12 lead ECG.
2. Connections to cardiac monitors and recognition of common arrhythmias.
3. Familiarity with treadmill exercise test (at SR level).
4. Insertion of central line, temporary pacemaker.
5. Insertion of swan- Ganz catheter and interpretation of readings.

Communication skills:

1. Explaining to patient with acute coronary syndrome regarding further plans and regarding activities post discharge.
2. Explaining to patients about secondary prevention of coronary artery disease.
3. Consenting patients for cardiac procedures like coronary angiography, pacemaker etc.
4. Communication with families of sick patients in the unit.

Leadership: From R2 level onwards the resident will be running the organization of CCU admissions, transfers and discharges. The resident also will be responsible to make the management plans of the patients under supervision.

DERMATOLOGY

Aim: To provide resident with the knowledge and skills to enable him / her to assess and manage patients presenting with the acute dermatology problems outlined below.

For each scenario the resident should in particular gain knowledge and skills to:

- Assess symptoms and signs
- Formulate a differential diagnosis
- Select appropriate investigations and accurately interpret investigation reports
- Communicate the diagnosis and prognosis
- Institute appropriate treatment recognizing indications, contraindications and side effects.

Problem	Knowledge	Skills
Skin failure e.g. toxic epidermal necrolysis, erythroderma	Causes Emergency management Complications	Assess mucosal involvement and systemic effects including estimation of fluid requirement Start initial treatment rapidly Recognize when to consult dermatology, ophthalmology
Urticaria, angio-oedema, anaphylaxis	Precipitating circumstances and associated conditions Complications	Assessment of airway competence and management of upper airway obstruction Initiate rapid treatment
Cellulitis	Causal microbial agents: antibiotic rationale Associated conditions	Differential diagnosis for venous thrombosis Recognize need for nursing skills for local treatments including dressings
Cutaneous drug reactions	Patterns and common precipitants Serious complications e.g. Stevens Johnson syndrome	Assess mucosal involvement
Herpes zoster and disseminated herpes simplex	Pattern Complications Treatment options	Recognize: High risk patients Severe infections When to consult other specialty e.g. ophthalmology

Problem	Knowledge	Skills
Acute cutaneous vasculitis	Causes Complications	Assess systemic involvement
Pruritus	Causes and associated conditions including: Infestation Primary skin disease Systemic disease Management options	Initiate investigations to explore the differential diagnosis Identify contacts and refer to infection team if scabies diagnosed
Psoriasis and eczema	Patterns and clinical variants Indications, contraindications and side effects of first line therapies Serious complications	Describe and record patterns Recognize: Psychosocial effects The role of dermatology nurse
Manifestations of systemic disease affecting skin, hair or nails	Cutaneous signs in: Endocrine and metabolic disease Gastrointestinal disease Malignancy Connective tissue disease Immunosuppression TB and sarcoid	Recognize the underlying disease

ENDOCRINOLOGY

Introduction:

During the elective rotation, the residents will have a great opportunity to get exposure and good experience in evaluation and managing various common endocrine disorders.

Objectives:

1. To demonstrate competency in medical interviewing physical findings of common endocrine disorders.
2. To understand the pathophysiology of diabetes and diabetic complications.
3. To demonstrate competency in diabetes management.
4. To attain sufficient knowledge in communication skills and techniques; in diabetes education counseling for insulin therapy, blood glucose monitoring, insulin injection technique, and ongoing insulin adjustment.
5. To understand basic pathophysiology of common endocrine disorders.
6. To master management of endocrine emergencies.
7. To perform complete evaluation and proper initial assessment of various endocrine disorder and address management plan.
8. To enhance patient-based learning with outside reading and appropriate use of literature.
9. To explore the interest of research about diabetes and common endocrine disorder in our population.

Educational Goals:

1. Common clinical presentation: it is expected that the resident learns the differential diagnosis and the ability to perform a cost-effective work-up of these conditions.
2. Physical diagnosis: it is expected that the resident recognize physical signs of endocrine diseases.
3. Primary interpretation of tests: it is expected that the resident understands the indications of ordering these tests e.g. TFT, short synachen test, bone and investigation hypogonadism.

Rotation structure and responsibilities:

Program:

1. Conducting one endocrine and one diabetic clinic per week under supervision.
2. Involves with various in hospital consultations.
3. Looking after endocrine inpatient service.
4. Involvement in the endocrine weekly teaching continues education activities.
5. The resident will be with the endocrine unit for the 5 working days per week.
6. Residents are required to attend didactic lecture series and core curriculum as per the program.
7. Residents are scheduled for on-call only during weekends 2 to 3 times per month.

Clinical Conditions:

It is expected that the resident be familiar with all the conditions listed. These conditions are divided in two categories: Category A and B.

Category A

The resident is expected to develop competence in the diagnosis and management without the need for consultation.

Category B

The resident is expected to develop a basic understanding of the diagnosis and management to enable him/her to co-manage/refer to an endocrinologist. Refer to the below-mentioned table.

Recommended resources for knowledge:

1. Principles and practice of endocrinology and metabolism by Becker.
2. Endocrine Secrets by Michael T. McDermott, MD.
3. Diabetic Care Journal.
4. Journal of clinical endocrinology and metabolism (JCEM)
5. Up-to-date.

ENDOCRINOLOGY CURRICULUM

	Category	Subcategory	Subcategory	A=Manage B=Co- Manage C=Refer
	1.Common Clinical Presentations	Extensive understanding of full differential. Knowledge of the full w/u and ability to Carry out a prioritized, cost effective w/u.		
	Hirsutism			
	Amenorrhoea			
	Goitre			
	Weight gain, obesity			
	Galactorrhoea			
	Polyuria, polydipsia			
	Osteopenia			
	2.Physical Diagnosis			
	Exophthalmos			
	Lid Lag			
	Pre-tibial edema			
	DTR's			
	Palpation of thyroid gland			
	Cushingoid stigmata			
	Chvostek's sign			
	Retinopathy			
	3.Procedure Skills	Perform		
	4.Primary Interpretation of Tests			
	TFTs			
	Glycosylated Hb.			
	Microalbuminuria			
	ACTH Stimulation test			
	Synacthen			
	Lipid panel			
	Biochemical assessment of pituitary function			
	5.Ordering and Understanding tests			
	Thyroid uptake scan			
	Thyroid ultrasound			

	FNA of thyroid nodule			
	Bone densitometry			
	CT/MRI of pituitary			
	24 hr metanephrine & Echo			
	24 hr for 5 HIAA			
6.Clinical Conditions				
	Diabetes Mellitus			
		Health Maintenance		A
		Dietary counseling		A
		Glycemic control		A
			Use of oral agents	A
			Use of insulin	A
			Hypoglycemia	A
			Diabetes & Pregnancy	B
			Diabetic complications	A
			DKA	A
			HNKS	A
			Nephropathy	A
			Neuropathy	A
			LE Ulcers	A
			Retinopathy	B
			Gastropathy	B
			Vasculopathy	B
		Hypoglycemic disorders		B
		Thyroid disorders		
		Hyperthyroidism	Non-toxic multinodular goitre	B
			Grave's disease	A
			Thyroiditis	A
		Hypothyroidism		
			Autoimmune	A
			Drug induced	A
			Myxedema coma	B
		Thyroid nodule		B
		Thyroid disease during pregnancy		B
	Parathyroid disorders			
		Hyperparathyroidism		B
		Hypoparathyroid disorders		B

Osteoporosis			
	Post-menopausal		A
	Drug induced		A
	Metabolic abnormalities (inherited)		B
Adrenal disorders			
	Hypercortisolism		B
	Adrenal insufficiency		A
	Hyperaldosteronism		B
	Pheochromocytoma		C
	MEN Syndromes		C
	Incidentalomas		B
Amenorrhea			
	Primary		C
	Secondary		B
		Polycystic ovarian syndrome	B
		Exercise/anorexia	B
		Anovulatory	B
Infertility			B
Hypogonadism			B
Menopause			
	Early symptoms		A
	Late sequelae		A
	HRT		A
	Non-estrogen therapies		A
Lipid abnormalities			
	Inherited ?acquired dyslipidemia		B
	Drug induced		A
Pituitary disease	Hypopituitarism		B
	Pituitary tumours		C
	Diabetes Insipidus		C
Electrolyte abnormalities			
	Hypercalcemia		A
	Hypernatremia		A
	Hyponatremia		A
	Hyperkalemia		A
	Hypokalemia		A
	Hypocalcemia		A

EMERGENCY MEDICINE ROTATION (FOR INTERNAL MEDICINE RESIDENTS)

ENROLLMENT:

Junior resident (R1) and senior resident (R3) of internal medicine will spend 1 month EM rotation either at SQUH, ED, or RH Adult ED.

OBJECTIVES:

By the end of the rotation, the residents are expected to acquire the following competencies:

MEDICAL EXPERT:

1. Possesses the basic scientific and clinic knowledge necessary to rapidly assess and manage a full spectrum of patients of all ages, with acute or undifferentiated medical illness ranging from the life threatening to common minor presentations.
2. Performs appropriately selective, accurate, and well organized history and physical examinations.
3. Presents the history and physical in a concise, organized approach, including all relevant information.
4. Must have an approach to and be able to develop a differential diagnosis to the common presenting complaints.
5. Be able to develop a work-up plan, understanding the indications, interpretation, and limitations of:
 - a. Laboratory tests.
 - b. Radiology investigations.
 - c. ECGs.
6. Be able to develop a comprehensive safe efficient care plan for the patient to the point of disposition (discharge, admission, consult).
7. Demonstrate an understanding of the natural history, pathophysiology, treatment of the acute and common medical disorders that present to the ED.
8. Selects and performs medical procedures (indications, contraindications and complications) in an appropriate, safe, and skillful manner with due attention to minimizing patient risk and discomfort. The technical skills include, but are not limited to:
 - a. Vascular access (peripheral and central)
 - b. Anesthesia (local, procedural sedation).
 - c. Abdominal procedures (NG insertion, abdominal paracentesis).
 - d. Arterial blood gas.
 - e. Lumbar puncture.
 - f. Airway management (oxygenation and ventilation techniques, RSI, principles)
 - g. ACLS skills (CRP, cardioversion, defibrillation, pacemaker placement, cardiocentesis.)

COMMUNICATOR

1. Demonstrates appropriately accurate, concise, timely and legible emergency charting, with follow-up notes. Charting should include interpretation/analysis of the lab and radiologic investigations.
2. Demonstrates effective verbal communication with and establishes positive (therapeutic and/or working) relationships with:
 - a. Patients and their families.

- b. Nurses, Respiratory therapists, unit clerks, patient attendants, social worker.
 - c. Attending physicians, residents and medical student with the Department, EMS personnel.
 - d. Consultants by telephone/in person.
3. Demonstrate ability to effectively deliver “bad news” to patients/families in a professional manner.
 4. The senior resident (R3) will be expected to handle conflict situations and facilitates their resolution.

COLLABORATOR:

1. Interacts effectively as a member of the multidisciplinary emergency health care team, acknowledging and facilitating their roles and expertise.
2. Respect the other members of the emergency department and seek out their opinions and skills when necessary.
3. Demonstrate flexibility in one’s role within the Emergency Department if the need arises.
4. Be capable of involving the patient and family in decision-making when appropriate.
5. Recognize the expertise of other health professionals and seek consultation when appropriate.

MANAGER:

1. Work at a pace that is appropriate for level. Senior medical residents (R3) should be able to manage several acutely ill patients concurrently. R3s should be able to assist in flow management and teach junior residents and students.
2. Be able to triage multiple patients arriving in the emergency department and see patients in order of priority.
3. Show efficient and effective use of ancillary testing including bun to limited to: Blood tests, cultures, diagnostic radiology.
4. Comprehend the importance of and manage the flow of patients within the emergency. Department recognizing that it is a hospital problem rather than ED only problem.
5. Effective use of consultants and of follow-up visits (i.e. clinics).
6. Be cognizant of the role of the internal medicine department with respect to the hospital’s disaster management plan.

HEALTH ADVOCATE:

1. Understand that the patient’s well being is central to all medical care.
2. Demonstrate an understanding of how preventive medicine and health promotion may be integrated into the emergency care system.
3. Demonstrate and understanding of related public health issues.
4. Be the patient’s advocate of all times, particularly when they are unable to do themselves.
5. Improves efficiency and performance through appropriate understanding and use of information technology.

SCHOLAR

1. Continuously seeking out new knowledge e.g. texts, journals and incorporate this into daily practice.
2. The resident will have the ability to use information technology to direct self-learning as well as patient care.

3. Apply the principles and skill set of evidence-based medicine in identifying and applying best research evidence to patient care.
4. The senior resident (R3) must be able to apply landmark studies to patient care.
5. Teaches colleagues and student effectively (journal watch, case presentations, grand rounds, journal club, daily teaching)
6. Evaluates and gives constructive feedback using valid and reliable methods. (the senior residents R3 will have the opportunity to practice these skills during the month).

PROFESSIONAL

1. Demonstrate awareness of the racial, cultural, and social factors that influence the delivery of emergency medical care.
2. Show respect all times for the patient's:
 - a. Race/ethnic background.
 - b. Language.
 - c. Socio-economic level.
 - d. Religion/belief system
 - e. Gender/sexuality
 - f. Confidentiality.
3. Be insightful of one's own strengths and weaknesses, and recognize when to call for backup
4. Be able to receive and accept constructive feedback.
5. Display ethical behavior compatible with a physician at all times with respect to:
 - a. Patients and their families.
 - b. Allied health staff
 - c. Attending staff, residents, and medical students.
6. Be a role model for medical students, residents, staff physicians, nurses.
7. Maintains a healthy and sustainable balance between personal and professional lives.

Senior residents

1. Demonstrate acceptance of all actions committed under his/her supervision.
2. Display knowledge of the professional, legal, and ethical codes binding physicians.
3. Demonstrate awareness of relevant legislation applicable to the practice of emergency medicine.
4. Be able to recognize and intervene when unprofessional conduct occurs in the resident's midst as in accordance with government and professional regulations.

ASSESSMENT:

The residents will be assessed in accordance to OMSB rules and regulations.

Tools: OMSB – residents monthly progress report

Multi-source feedback (30-degree evaluation)

Mini-CEX evaluation.

DOPS for procedure.

References: Rosen's Emergency medicine textbook, 7th edition

GASTROENTEROLOGY

Specific objectives for OMSB residents during their rotation in Gastroenterology

By the end of the rotation, residents should be able to:

1. To demonstrate competency in medical interviewing and physical diagnosis as it relate to gastrointestinal disorders.
2. To enhance patient – based learning with consultation with a senior gastroenterologist and outside reading and appropriate use of the literature.
3. To provide competency in identifying the common gastrointestinal presentations encountered in Oman.
4. To understand the etiology, pathogenesis, and clinical features of the common GI problems.
5. To master the management of common GI emergencies including: Upper and lower GI bleeding, and acute pancreatitis.
6. To provide exposure to a wide variety of hepatology disorders including: HBV, HCV, liver cirrhosis, and hepatic encephalopathy.
7. Demonstrate understanding and application of cost-effective investigations required for GI and liver diseases and correctly interpret the results of these investigations.
8. To recognize the indications and side-effects of the different drugs used in GI and liver diseases.
9. To attain sufficient knowledge about epidemiological pattern of common GI and liver diseases.

ROTATION, STRUCTURE, AND RESPONSIBILITIES:

- In general, the residents will be expected to see all the referral for the gastroenterology opinion and to make their initial assessment after taking appropriate history and doing physical examination then to discuss.
- Residents are required to attend the departmental meeting as scheduled.
- Residents are required to attend hepatology clinic and a gastro clinic once a week.
- Residents are expected to know all the admitted patient and attend the daily rounds.

HEMATOLOGY

The program offers elective rotations in general hematology at approved facilities. At the end of the rotation the residents are expected to develop knowledge, skills and attitude to manage patients with common hematological diseases.

SPECIFIC OBJECTIVES

At the end of the training period the trainee will be able to:-

- Arrive at an appropriate differential diagnosis following history taking and clinical examination.
- Request appropriate investigations.
- Initiate process of treatment required for individual blood diseases.
- Acquire the clinical experience in patient management in both inpatient care and consults.
- To recognize and manage Hematological emergencies such as febrile neutropenia, TTP.....etc.
- Enumerate, discuss and relate the basic pathophysiology underlying the common Hematological diseases.
- Interpret the hematological laboratory results (such as peripheral blood film, thrombophilia screen, HPLC and blood transfusion).
- An in-depth knowledge of the indication for transfusion of and the side effects of different blood products and manage such side effects competently.
- Explain the indications and side effects of different apheresis procedure and plasma pheresis.
- Perform Bone Marrow biopsies and lumbar puncture.

RESIDENT INPATIENT RESPONSIBILITIES

- Admission of patients
- Daily ward round with the allocated Hematology Registrar.
- Refer to other departments.
- Arrangement of investigations
- Writing discharge summaries
- Presenting patients on the Grand Round

EDUCATIONAL ACTIVITY

- Case discussion during ward round and Grand Round.
- Participate in unit activity both intra and interdepartmental.
- Attend the morphology teaching session every Tuesday.

ASSESSMENT

The residents will be assessed during Grand Rounds and teaching sessions.

INFECTIOUS DISEASES

Introduction:

During the elective month, the resident will be an integral part of the infectious diseases consulting team and will also work with the attending consultant who will care for patients admitted under care of infectious diseases unit. During this month, residents are expected to gain knowledge and experience in the evaluation and care of patients with a range of infectious diseases.

Objectives

i. PATIENT CARE

1. Demonstrate clinical skills of comprehensive medical interview, history and physical examination as applied to infectious diseases scenarios.
2. Demonstrate clinical skills in the diagnosis and medical management of acute and chronic infectious diseases syndromes and generate a differential diagnosis and problem list in accepted format.
3. Perform and record procedures
4. Perform, examine, and interpret Gram Stains.

ii. MEDICAL KNOWLEDGE

1. Demonstrate understanding and application of key facts of the following infectious diseases syndromes and their treatment as follows.
2. Implement correct usage of antibiotic therapy
3. Pulmonary infections in special settings
4. Cardiovascular infections, including endocarditis and prophylaxis of infective endocarditis
5. Complicated urinary tract infections
6. Central nervous system infections
7. Skin and soft tissue infections.
 - Gastrointestinal infections.
 - Bone and joint infections.
 - Gynecologic infections and sexually transmitted diseases.
 - Hepatitis and hepatitis syndromes.
 - Viral infections
 - Infections related to rickettsia.
 - Fungal infections.
 - Recognize infections caused by protozoans and helminthes.
 - Malaria
 - Understand and apply principles of infection control and prevention of nosocomial infections.
 - Recognize catheter-related infections.
 - Recognize mycobacterial and peritoneal infections.
 - Recognize infections in the immunocompromised host.
 - HIV infection and associated infections.
 - Sepsis and related syndromes.
 - Recognize immunizations, including travel related immunizations and utilize health advice resources for travelers.
 - Fever and fever of unknown origin.

INTENSIVE CARE MEDICINE

The main objective of ICU rotations is to make the resident comfortable in managing critically ill patient by gaining knowledge and skills in the management of these critically ill patient, also it is an opportunity to gain communication skills with the families of such patients and to learn some ethical and medico legal aspects in such cases.

Objectives:

- The resident must know respiratory physiology and pathophysiology of respiratory failure.
- The resident is expected to acquire knowledge and skills in assessing ventilated patients, formulate plan of management of critically ill patients.
- The resident should be able to explain the pathophysiology of all forms of shock and their management.
- The resident should be able to explain various modes of mechanical ventilation.
- The resident should be familiar with pharmacologic and mechanical circulatory support.
- The resident should be able to interpret the result of blood gases.
- The resident should be able to interpret the swan–ganz catheter readings and plan management accordingly.
- The resident should be able to communicate the relevant medical information to patient's relatives in a professional manner.
- The resident is expected to participate in the call schedule of the ICU.

Clinical skills to be acquired from ICU rotation:

1. Tracheal intubations.
2. Insertion of central lines (femoral, subclavian, internal jugular).
3. Insertion of arterial lines.
4. Chest tube insertion.
5. Invasive hemodynamic monitoring (Swan–Ganz).

Method of evaluation:

End of rotation evaluation.

MEDICAL ONCOLOGY

Introduction:

The primary aim is to get general practitioner who is able to do the following:

1. Suspect the presence of tumour.
2. Conduct history taking, physical examination and assessment of general condition.
3. Order the essential investigations to confirm diagnosis and clinical stage.
4. Aware of various options of treatment of common cancers and prognosis.
5. Able to write informative report for reference.
6. Can manage acute and late side effects of chemo, hormonal and radiation therapies.
7. Control cancer pain.
8. Give supportive care for terminally ill patients.
9. Counseling patients and family.
10. Writing death certificate for cancer patient.
11. The Secondary aim is to expose them to different branches of clinical oncology to promote some of them to specialize in oncology.

Learning Objectives

1. Knowledge (5 General Lectures)

- Epidemiological Profile of Cancer in Oman (incidence rates and risk factors especially to preventable ones).
- Concepts of cancer Control (primary prevention, detection of pre malignant conditions and early detection programs).
- Staging and risk classification of common cancers (Breast, Stomach, Lung, Lymphoma, Leukemia, Prostate, cervix, Colo-rectal, Head & Neck, Liver).
- Types of Treatment of Cancer and importance of multi – disciplinary planning of treatment for common cancers.
- Concept of radical and palliative treatments.
- Management of side effects of chemo and radiotherapy.
- Management of non-surgical oncology emergencies.

3. Skills: able to perform the following

- History taking, physical examination and eliciting physical signs
- Order essential investigations
- Pleural aspiration
- BM aspiration and biopsy
- FNA
- Caring for central line

- Caring for tracheostomy, gastrostomy and enphrostomy
- Making admission and discharge summary
- Editing referring reports & certifying death of cancer patients.

2. Attitudes

- Counseling patients and their families.
- Attitude towards colleagues, and paramedical staff.

3. Learning Methods

- General lectures (5 hours) hand-outs and references
- Clinical training in medical oncology (3 weeks)
- Clinical training in the radiation oncology department (one week).
- Attending tumor board meeting (3 hours at least)
- Library reading and making 2 presentations during the month.

Core Topics:

Introduction

Natural History, Staging, Grading, Etiology and management of the common malignant diseases:

- Breast Cancer
- Lung Cancer
- Gastric Cancer
- NHL
- Hodgkin's Lymphoma
- Ovarian tumors
- Colorectal Cancer
- Head & Neck tumors
- Classification, mode of action and side effects of the Chemotherapy and hormonal therapy
- Management of Oncology Emergencies
- Cancer Pain Control
- Communication skills and breaking bad news

NEUROLOGY

Introduction:

Neurology is one of the specialties in internal medicine dealing with disorders related to central and peripheral nervous system. Physicians are faced daily with patients with neurological disorders. Residents at the end of their training are expected to reach a level of competency in taking care of various patients with common neurological disorders in acute setting or in ambulatory care. The rotation in neurology is designed to meet these objectives. It is desirable that residents in internal medicine, FAMCO and Emergency medicine spend one month elective in neurology on yearly basis during their residency. Other specialties in which physicians are expected to encounter patients with neurological manifestation are expected to spend a minimum of one month elective in neurology during their training. Such specialties include (but not limited to) Ophthalmology, and radiology.

Objective of the rotation:

The resident who completes neurology rotation is expected to be able to:

1. Obtain detailed neurological history
2. Perform sufficient detailed neurological examination to elicit signs
3. Localize patient's lesion and formulate a differential diagnosis in order of priority
4. Plan the initial workup of the common neurological problems as well as plan management
5. Attain sufficient knowledge of common acute and chronic neurological problems encountered both in inpatient as well as ambulatory setting
6. Understand the utility and their limitation of the ancillary tests including neuro-imaging and electrophysiological testing
7. Perform lumbar puncture independently and be able to measure the CSF pressure
8. Request appropriate CSF analysis based on the case in Question
9. Communicate to the patient and relatives regarding their illness and plan of management
10. Understand the importance of other services like physiotherapy, speech therapy, etc, in the management of patients with neurological disorders.

Responsibilities of the resident(s)

A balanced service and academic environment will be ensured for the resident during the rotation in neurology. The resident will work under close supervision with given responsibilities according to his level of competency and training. The rotating resident is expected to perform the following responsibilities during his attachment.

Inpatient service

Full clerking of all inpatients admitted under the care of neurology. The clerking should emphasize patient's complaint in relation to his neurological symptoms. Detailed documentation of neurological exam is mandatory. The clerking should include:

- a. Detailed history with emphasis in the neurological symptoms
- b. Detailed neurological examination
- c. Summary of the case

- d. List of the differential diagnosis, in order of priority to reflect patients' problem rather than textbook list
- e. Suggest appropriate initial w/u
- f. Suggest appropriate management decision
2. Daily follow up of the patients (at least once during the weekends) including interaction with other services to optimize patient's care
3. Presentation of the cases during rounds
4. Tracing all the results and plan appropriate management decision after discussing with the team
5. Review patient's results including neuro-imaging and electrophysiological tests
6. Sign out (or ensure it is done) of all cases to the team on call on daily basis
7. Develop discharge plans with family and if needed involvement other services
8. review or type the discharge summary
9. Ensure appropriate follow up plans done prior to discharge including appropriate medications given at the time of discharge
10. Supervising interns/medical students when applicable, including providing teaching and educational material.

Consultation Inpatient service

1. Attend to all consultation assigned to you by the senior member of the team
2. All cases seen in consultation should be fully clerked with following details:
 - a. Detailed history with emphasis in the neurological symptoms
 - b. Detailed neurological examination
 - c. Summary of the case
 - d. List of the differential diagnosis, in order of priority to reflect patients' problem rather than textbook list
 - e. Suggest appropriate initial w/u
 - f. Suggest appropriate management decision

Daily follow up of the patients and alerting the team of any development.

Outpatient service

1. Attend a minimum of one clinic a week. The resident is expected to join the clinic after he finishes inpatient and consult service rounds
2. The resident is expected to see 2 to 3 new patients independently per clinic with detailed review of the case with the consultant

Neurophysiology Laboratory

NCS/EMG

- Attend once a week clinic with the consultant
- The resident is expected to observe the procedures and understand the importance of these tests and their uses

NCS/EMG

- Attend at least one ½ day with EEG technologist during the performance of the test.
- Attend once a week reading session with the consultant

Core topics:

The resident is expected to see as many cases during the rotation. The resident is expected to be familiar with common presentation, differential diagnosis, pathophysiology, diagnostic w/u, and management plan of the following common categories of neurological disorders:

- Stroke (various etiologies)
- Epilepsy
- Movement disorders
- Neuromuscular disorder
- CNS/Meningeal infection
- Neuropathy
- Dementia
- Delirium
- Headaches
- Demyelinating disorders including MS

The resident is expected to be familiar with management of patients with following acute neurological emergencies:

- Status epilepticus
- Myasthenic crises
- Guillaine Barre syndrome
- Acute stroke
- Acute intracerebral bleeding
- Meningitis
- Encephalitis
- Acute delirium including Delirium Tremor
- Management of acutely agitated patient
- Approach to a patient with coma
- Acute MS relapse
- Acute paraplegia

Teaching during the rotation

- The emphasis will be on gaining clinical experience by seeing as many patients as possible with various neurological disorders.
- Resident will be observed performing neurological examination and technique will be refined if necessary
- Case based discussion will be done regularly during the rotation. Resident is expected to review the literature and present up-to-date knowledge related to his patients
- Twice a week detailed rounds will be conducted with emphasis on bedside teaching
- In addition to the above, the resident is expected to participate in the following education activities when assigned to:
 1. Presentation in journal club (articles will be given to the resident by the team) (1 hr)
 2. Topic presentation (with detailed literature review) including acute neurological emergencies rounds
 3. Presentation in grand round during the rotation to the department with detailed literature review.

4. Attend neuro-radiology and neuropathology meetings with the unit.

Participating Hospitals:

- Sultan Qaboos University Hospital
- Royal Hospital

Evaluation of the resident

- Mid-term verbal evaluation will be given to the resident by the physician in Charge after consultation with the rest of the team
- End of rotation OMSB evaluation form will be filled up
- No formal written or clinical examinations will be conducted

Evaluation of the rotation by the resident

Residents are encouraged to give verbal and/or in writing their feedback about the rotation as well as their tutors.

Resources/References

Textbooks:

1. Neurology in Clinical Practice by W G Bradley (latest edition)
2. Harrison's Neurology in Clinical Medicine by Stephen L Hauser, et al (latest edition)
3. Technique of the Neurological Examination by W E DeMyer (or similar textbook)
4. Localization in Clinical Neurology by P W Brazis
5. On Call Neurology: On Call Series (On Call) by R S Marshall

Web-based

1. emedicine.com
2. medlink.com (via e-library of OMSB)

NEPHROLOGY

Introduction:

The nephrology elective program for OMSB trainees is offered at the Royal hospital and Sultan Qaboos university hospital.

OBJECTIVES OF THE ROTATION:

The objective of this module is to enable residents to explain the physiology and pathology of common renal problems, with the focus on clinical approach to these disorders. They should be able to obtain a comprehensive history and perform an adequate physical examination. They should be able to order diagnostic investigations and be able to interpret information thus obtained.

Fluid and electrolytes:

1. Obtain pertinent history and physical examination of a patient with edema, dehydration, and electrolyte disturbances.
2. Explain the etiology and pathogenesis of these electrolyte problems.
3. Explain the basic management of these electrolyte problems.

Acid-Base disorders:

1. Recognize various acid-base disorders.
2. Explain various causes of acid-base disorders.
3. Assess primary and secondary acid-base disturbances.
4. Explain the management of patient with acid base disorders.

Acute Kidney injury:

1. Resident should be able to define and classify acute kidney injury.
2. Explain the etiology and pathogenesis of acute kidney injury.
3. Order relevant radiological and biochemical investigations and be able to interpret them.
4. Explain the factors predisposing to acute kidney injury and the means to prevent it.
5. Explain supportive care of a patient with acute kidney injury (fluid management, diet etc).
6. Explain the indications for dialysis in acute renal failure

Chronic Kidney Disease:

1. Resident should be able to distinguish between acute renal failure and chronic Kidney Disease (CKD).
2. Explain the stages of Chronic Kidney Disease (CKD).
3. Explain common causes of chronic kidney disease.
4. Explain the metabolic and functional changes associated with chronic kidney disease.
5. Explain the management of chronic kidney disease.
6. Should be able to provide counseling to the patients with CKD and provide the treatment options of end-stage renal disease.

Evaluation of Hematuria:

1. Evaluate patients presenting with hematuria.
2. Should demonstrate when and who to refer the case appropriately for specialist care.

Evaluation of Proteinuria:

1. Evaluate patients with proteinuria in a cost effective manner.
2. Explain when and who to refer the patient for appropriate specialty care.

Hypertension:

1. Explain the classification, treatment and complications of uncontrolled hypertension and side effects of commonly used antihypertensive drugs.
2. Explain the non-pharmacological and pharmacological management of hypertension.
3. Explain when and how to evaluate for secondary hypertension.
4. Explain the factors which affect compliance with therapy and strategies to improve compliance.

Cystic Kidney Diseases:

1. Classify various forms of cystic diseases of the kidney.
2. Explain the course, prognosis, and complications of adult polycystic kidney disease

Miscellaneous:

The residents will be encouraged to acquire knowledge of some common immunosuppressant medications used in renal transplantation. The residents will be encouraged to acquire knowledge of some common complications and their management encountered during hemodialysis.

The residents will be encouraged to acquire knowledge of some common complications and their management encountered during peritoneal dialysis.

Assessment of rotation:

The residents will be assessed at one or more time points during the rotation formally. These formal assessments may be in the form of multiple choice questions, observed history taking and clinical examination and evaluation of oral presentations.

Informal assessment regarding communications and procedural skills, professional interactions with paramedical and medical staff, and colleagues may be obtained verbally and incorporated in final evaluation of the rotation.

OUTPATIENT MEDICINE

1. **Subspecialty Clinic:** Royal Hospital and Sultan Qaboos University Hospital.
2. **Ambulatory care clinic:** Bowsher Polyclinic, Armed Forces Hospital, and Sultan Qaboos University Hospital.

ROTATION-SPECIFIC OBJECTIVES:

1. Competences as a **Medical Expert:**
 - a. Demonstrate ability to diagnose, appropriately investigate and recommend treatment and follow-up of common problems seen in ambulatory internal medicine, e.g.,
 - i. Hematological diseases (anemia, leucopenia, thrombocytopenia, venous thromboembolism).
 - ii. Rheumatological diseases (acute arthritis, gout, rheumatoid arthritis, fibromyalgia, vasculitides)
 - iii. Pulmonary/airway diseases (asthma, COPD, pleural effusion, chronic cough).
 - iv. Atrial fibrillation.
 - v. Congestive heart failure.
 - vi. Endocrine disorders (diabetes mellitus, thyroid disorders, osteoporosis, adrenal disorders).
 - vii. Fever of unknown origin.
 - viii. Gastrointestinal disorders (abdominal pain, hepatitis, GERD, peptic ulcer disease, colitis, chronic liver disease).
 - ix. Hyperlipidemia.
 - x. Hypertension.
 - xi. Ischemic heart disease.
 - xii. Malaise, fatigue, or other undifferentiated problems.
 - xiii. Neurological diseases (TIA, stroke, peripheral neuropathy).
 - xiv. Renal diseases (acute and chronic renal failure, proteinuria, hematuria).
 - xv. Risk factor modulation for cerebrovascular, cardiovascular, and peripheral vascular disease, obesity, smoking cessation, alcohol and illicit drug abuse.
 - xvi. Wasting illnesses.
 - xvii. Perioperative risk assessment and management.
 - b. Apply current evidence and guidelines for common problems (hypertension, lipid management, diabetes care, cardiovascular diseases).
2. Competences as a **communicator:**
 - a. Communicate effectively with patients and their families about the management plan and diagnosis, taking into account the limited time available in an outpatient clinic setting.
 - b. Establish rapport with patients and their families, even in difficult and stressful times.

3. Competences as a **collaborator**:
 - a. Recognize the key role family practitioner plays in the management of patients.
 - b. Recognize the importance of the referring physician in the overall care of the patient.
 - c. Communicate effectively with the referring physician through concise written or verbal communications.

3. Competences as a **Manager**:
 - a. Manage time in outpatient setting, respecting the time and schedule of the patients and the needs of the clinic itself.
 - b. Demonstrate appropriate but cost-effective utilization of diagnostic tests and subspecialty referral.

4. Competence as a **Health Advocate**:
 - a. Recognize and identify opportunities for primary and secondary prevention strategies.
 - i. Optimization of the current plans.
 - ii. Previously unaddressed/unrecognized issues.

5. Competence as a **Scholar**:
 - a. Identify personal learning gaps or needs and develop a strategy to meet those needs.
 - b. Appropriately utilize the information technology to address clinical questions and learning needs.
 - c. Review relevant key clinical trials or publications pertinent to the cases seen.

6. Competences as a **professional**:
 - a. Deliver the highest quality of care with integrity, honesty, and compassion.
 - b. Demonstrate behaviors and attitudes consistent with the role of a consultant.

PSYCHIATRY

Aim: to provide resident with the knowledge and skills to be able to assess and manage acutely patients presenting as a general medical emergencies with the psychiatric problems outlined below. For each scenario the resident should in particular gain knowledge and skills to:

- Assess symptoms and signs
- Formulate a differential diagnosis
- Select appropriate investigations and accurately interpret investigation reports
- Communicate the diagnosis and prognosis
- Institute appropriate treatment recognizing indications, contraindications and side effects

Problem	Knowledge	Skills
Parasuicide	Risk factors for suicide Local protocols for liaison with psychiatric services	Evaluation of suicide risk Identify co-morbid psychiatric problems
Acute psychosis	Associated circumstances Initial management options including drug indications, contraindications and side effects	Assessment of mental status Initiate investigations to identify organic cause
Opiate dependence	Opiate withdrawal syndrome including prevention/management Complications of intravenous injecting	Management of the aggressive patient Identify co-morbid psychiatric problems
Bereavement	Stages of bereavement reactions	Recognize atypical grief reactions
Depression	Risk factors Management options including side effects and interactions of anti-depressants	Initiate investigations to exclude organic cause Recognize depression in patients presenting with physical symptoms Liaison with psychiatric services

RESPIRATORY MEDICINE

Introduction:

The aim respiratory training program for OMSB residents in Internal Medicine is to provide training in clinical and all relevant bedside procedures pertaining to pulmonary medicine so that when the resident doctor leaves the rotation he/she will have the confidence to manage patients with pulmonary conditions in a scientific, compassionate and efficient way. By the end of the rotation, residents are expected to reach a level of competency in taking care of various patients with common respiratory disorders.

Rotation Objectives

The main objective of rotation is to enable residents to attain sufficient knowledge and skills to understand and manage common acute and chronic respiratory problems encountered in both inpatient and ambulatory setting. The resident who completes respiratory rotation is expected to be able to:

11. Obtain detailed respiratory history.
12. Perform detailed Respiratory examination to elicit signs.
13. Plan the initial workup and management of the common respiratory problems.
14. Understand the utility and the importance of the main respiratory investigations including:
 - a. imaging such as chest X-ray, CT chest, HRCT
 - b. Pleural aspiration and biopsy
 - c. Bronchoscopy including understanding the indications, contra-indications and expected complications of bronchoscopy and related tests such as bronco-alveolar lavage, trans-bronchial biopsy and endobronchial biopsy
 - d. Pulmonary function tests including peak expiratory flow rate, spirometry and lung volumes.
 - e. Interpretation of arterial blood gases
15. Perform pleural aspiration (R1-R4) and Pleural biopsy and Intercostal drainage tube insertion (R3&R4).
16. Communicate to the patient and relatives regarding their illness and plan of management.

Resident Responsibilities

The resident will work under close supervision with given responsibilities according to his/her level of training. The rotating resident is expected to perform the following responsibilities during his/her attachment:

11. Full clerking of all inpatients admitted under the care of the respiratory team. The clerking should emphasize patient's complaint in relation to his symptoms. Detailed documentation of Respiratory examination mandatory. The clerking should include:
 - a. Detailed history and examination.
 - b. Summary of the case

- c. List of the differential diagnosis, in order of priority to reflect patients' problem.
 - d. Management plan including appropriate investigations and treatment
12. Daily follow up of the patients including interaction with other services to optimize patient's care
13. Presentation of the cases during rounds
14. Tracing and review patient's results and plan appropriate management decision in consultation with seniors
15. Hand-over of the patients requiring follow up to the team on call on daily basis
16. Preparation and execution of the discharge plan for all patients under his/her follow up including:
 - a. Discussions with patients and their families any relevant issues including explanation of the condition, treatment, compliance and prognosis as appropriate
 - b. Clarification of any arrangements or consultations with other services
 - c. Discharge medications including assessment of inhaler technique
 - d. Discharge summary
 - e. Follow up arrangements
17. Supervision interns/medical students when applicable, including providing teaching and educational material
18. Attend and participate in the management and follow up cross consultation from other medical teams or departments.
 - a. All patients seen during consultation should be fully clerked
 - b. Follow up of the patients and alerting the team of any development in the case
19. Attend 1-2 general respiratory clinics per week. The resident is expected to see:
 - a. One to two new patients independently per clinic with detailed review of the case with the consultant
 - b. 4-5 follow up patients per clinic with full discussion with a senior member of the team before final decisions are made

Core topics

The resident is expected to see as many cases during the rotation. The resident is expected to be familiar with common presentation, differential diagnosis, pathophysiology, investigations, and management plan of the following common categories of respiratory disorders:

- Asthma
- Bronchiectasis
- Chronic Cough
- Chronic Obstructive Pulmonary Disease (COPD)
- Haemoptysis
- Interstitial Lung Disease (ILD)
- Lung cancer
- Obstructive Sleep Apnea
- Pleural effusion
- Pneumonias
- Pneumothorax
- Pulmonary Embolism
- Pulmonary Hypertension
- Respiratory Failure

The resident is expected to be competent in the management of patients with the following acute respiratory emergencies:

- A cute Exacerbation of Asthma
- A cute Exacerbation of COPD
- A cute Respiratory Failure
- Haemoptysis
- Pneumonias
- Pulmonary Embolism
- Tension Pneumothorax

Teaching during the rotation

- The emphasis will be on gaining clinical experience by seeing as many patients as possible with various respiratory disorders.
- Resident will be observed performing respiratory examination and technique will be refined if necessary
- Case based discussion will be done regularly during the rotation. Residents are expected to review the literature and present up to date knowledge related to his patients
- detailed rounds will be conducted twice a week with emphasis on bedside teaching
- In addition to the above, the resident is expected to:
 5. Present in the respiratory journal club (articles will be given to the resident by the team)
 6. Present one grand round/clinical meeting during the rotation with detailed literature review
 7. Present at least one topic during the rotation to the respiratory team with detailed literature review
 8. Attend Radiology meeting
 9. Attend Department of Medicine clinical meetings
 10. Attend and may be asked to present in Oman Respiratory Society (ORS) meetings.

Evaluation of the residents

- Mid-term verbal evaluation will be given to the resident by the assigned clinical supervisor "usually physician in charge of the respiratory unit) after consultation with the rest of the team
- End of rotation OMSB evaluation form will be completed by the clinical supervisor
- No formal written or clinical examinations will be conducted

Evaluation of the rotation by the resident

Residents are expected to give verbal as well in writing (when required) their feedback about the rotation.

RHEUMATOLOGY

Goal: To familiarize the medical residents with the subspecialty practice of rheumatology so that they can achieve a level of competence in the diagnosis and management of patients with rheumatic disorders that is commensurate with the expectations of the OMSB. The objectives that will enable the resident to achieve this goal are set forth in the remainder of this document.

Faculty and locations: Teaching faculty includes the rheumatologist at the Royal Hospital & SQUH

Responsibilities of Residents: At the start of their rotations, residents can become familiar with their duties and responsibilities reading this curriculum. In addition residents will be given an orientation by the teams in both centers of the rotation

Common Clinical Syndromes: In general, residents can expect to gain knowledge in evaluating and managing patients with the conditions listed below in which elements of all of the core competencies of internal medicine are employed.

1. Chronic, Noninflammatory, Regional and Generalized Pain Syndromes, and Peripheral Joint Osteoarthritis

These conditions are the most common musculoskeletal conditions that an internist will see in general practice.

- The regional pain syndromes
- Generalized musculoskeletal pain syndromes. Peripheral joint osteoarthritis.

2. Acute Monoarthritis

3. Crystal-induced synovitis both acute and chronic arthritis.

4. Infective arthritis – presenting as acute or chronic arthritis.

Rheumatic manifestations of AIDS.

5. Chronic inflammatory arthritis

- a. Rheumatoid arthritis
- b. Seronegative spondyloarthropathy syndrome
 - Ankylosing spondylitis
 - Reactive arthritis
 - Psoriatic arthritis.
 - Inflammatory bowel disease.
 - Unclassifiable spondyloarthropathy.

6. Systemic autoimmune connective tissue disease:

- a. Systemic lupus erythematosus
- b. Antiphospholipid syndrome
- c. Poly/Dermatomyositis.
- d. Systemic Sclerosis
- e. Systemic Vasculitis (Wegener's granulomatosis, polyarteritis nodosa, Churg Strauss Syndrome, Giant Cell Arteritis, Takayasu arteritis, Henoch Shonlein purpura, Essential Mixed cryoglobulinemia, hypersensitivity)
- f. Vasculitis.

- g. Other diseases.
- h. Sarcoidosis.
- i. Behcets syndrome.
- j. Amyloidosis

7. Metabolic Bone diseases including osteoporosis

8. Spondyloarthropathies

9. Metabolic bone disease, such as, Osteoporosis

Educational Goals: During the rheumatology rotation, the educational process will be focused on the core clinical competencies.

1. Patient Care Goal:

Residents will acquire clinical skills to recognize and care for patients with the conditions described in the introduction. Specific objectives include:

- Learn how to evaluate patients with rheumatic complaints with emphasis on relevant history taking and the recognition of the signs of inflammation to formulate testable diagnostic hypothesis.
- Employ and acquire some experience in interpreting a variety of imaging techniques used as surrogates of skeletal anatomy and the pitfalls in the interpretation of the results.
- Learn the appropriate use of immunologic based laboratory tests.
- Learn how to perform arthrocentesis of the knee joint.
- Acquire familiarity with the medical complications of the autoimmune syndromes and how to initiate management.
- Acquire adequate knowledge about the common medications used in Rheumatic Diseases, such as, NSAIDs, Disease Modifying Anti-rheumatic Drugs (DMARD), Corticosteroids & the new biologic agents.

2. Medical Knowledge Goal:

Residents will gain practical experience and knowledge in the areas discussed in the section on the rheumatology experience. Three areas will be emphasized because of their clinical relevance.

- Residents will gain a better understanding of diarthrodial joint failure and its clinical correlate osteoarthritis. Specific objectives include: establishing the diagnosis, awareness of the pitfalls of imaging studies and extraordinary, but limited, responsiveness of patients to a variety of therapies.
- Residents will learn how to recognize the signs of chronic joint inflammation in patients with rheumatoid arthritis. Specific objectives include the recognition of the inflammatory signs, the associated immunopathologic events including the role of inflammatory cytokines and the newer therapies that modulate their effects.
- Residents will learn about the immunologic tests that are used to facilitate the diagnosis of the autoimmune and vasculitis syndromes. Specific objectives are learning what these tests are, how they are employed and pitfalls in their interpretation.

3. **Practice-based Learning and Improvement Goal:**

Residents will learn to employ judgment derived from clinical experiences gained in the rheumatology clinic as well as evidenced based patient care practices.

4. **Communications Skill Goal:**

Residents will gain experience in effective communication between patients and with other sub- specialists. Specific objectives include the following:

- Demonstrate effective and empathic communication skills to counsel patients about the nature of their rheumatic condition and its natural history.
- Demonstrate effective oral and written communication with referring physicians and with other physicians engaged in managing patients.

5. **Professionalism Goal.**

Residents will demonstrate professional behavior that is characterized by high ethical principles. The specific objective is to acquire skills in personal deportment that demonstrate sensitivity to a variety of patient issues that surround a rheumatologic disorder.

Suggested reading: Oxford textbook of rheumatology
Kelly text book of rheumatology
Dubois “Lupus”
Primers of rheumatic diseases.

RESEARCH

Research Projects for Internal Medicine OMSB Residents

The residents in internal medicine are encouraged to undertake research and have a good knowledge of research methodology. They should be actively involved with research projects throughout the training period. A research subcommittee have been formed at the internal medicine scientific committee; the committee will formulate the rules and regulations for conducting research and will facilitate for residents the process in order for their research to be conducted and possibly published. The residents are expected to have and acquire the knowledge, skills and attitudes from conducting research projects, these skills are highlighted below:

Knowledge:

- Know how to design a research study.
- Know how to use appropriate statistical methods.
- Know the principles of research ethics.
- Know how to write a scientific paper.
- Sources of research funding

Skills:

- Undertake systemic critical review of scientific literature.
- Ability to frame questions to be answered by a research project.
- Develop protocols and methods for research.
- Be able to use databases.
- Be able to accurately analyze data.
- To be able to write a scientific paper.
- Have good written and verbal presentation skills

Attitudes:

- Demonstrate curiosity and critical spirit of enquiry.
- Ensure patient confidentiality.
- Demonstrate knowledge of the importance of ethical approval and patient consent for clinical research.
- Humility

RESIDENT GRADED RESPONSIBILITIES

Residents (R3/R4)

- The R3 is responsible for the delivery of care to all patients in the unit.
- Assignment of cases to junior members of the team (medical students, interns and R1s, R2s).
- Oversee the safe and efficient delivery of care to the patients.
- Demonstrate administrative and leadership qualities by managing day-to-day issues of the junior members of the team, distribution of work and follow up on important tasks assigned to the members.
- Actively participate in all scheduled clinical and educational activities of the ward (morning meeting, radiology rounds, ward rounds, teaching rounds, didactic teaching and hand-over rounds).
- Provide support, identify learning needs and supervise the junior members of the team.
- Organize the ward rounds, teaching rounds and relay the learning needs of the junior members of the team to appropriate forum (organizing case presentations, radiology rounds, pathology rounds and rounds by specialty teams).
- Communicate any training related issues with the Chief resident or Assistant Program Director.
- Ensure completeness and accuracy of the documentation related to the patient care.
- Communicate with various care providers for optimal patient care (nurses, physiotherapist, dietary, laboratory, radiology personnel and other specialty consults).
- Seek advice from senior members of the team, when in doubt, related to patient care issues.
- Demonstrate managerial skills by prioritizing cases, admissions, discharges and bed allocation.
- Demonstrate educational skills by providing rationales and evidence when making decisions. Providing supportive literature delivering knowledge in various formats to the members of the team.

Residents (R1/R2)

- The R1/R2s are required to be on-call as per schedule for internal medicine along with other members of the on-call team.
- Respond to medical emergencies in the A&E and throughout the hospital when called to evaluate medical cases in a timely and prioritized manner.
- Supervise the interns and with them follow the patients assigned to them by their senior team members. This involves admission, discharge, history, examination, requesting laboratory and other investigations, following their results, documentation of the obtained information and presenting to the senior team members.
- Communicate with medical students and assign and discuss the cases with them.
- Actively participate in all scheduled clinical and educational activities of the ward (morning meeting, radiology rounds, ward rounds, teaching rounds, didactic teaching and hand-over rounds).
- Perform procedures under the supervision of senior members of the team or the specialty team participating in patient care.
- Lead the ward rounds and present the cases to senior members of the team.
- Identify learning needs and convey them to the senior members of the team (such as, interesting cases for discussion and presentation, cases for discussion in radiology rounds, etc).
- Ensure completeness and accuracy of the documentation related to the patient care.
- Communicate with various care providers for optimal patient care (nurses, physiotherapist, dietary, laboratory, radiology personnel and other specialty consults).
- Seek advice related to patient care issues from senior members of the team when in doubt.

Specific Criteria for Accreditation of OMSB Residency Training Program in Internal Medicine

Internal Medicine Scientific Committee:

The committees as per OMSB requirement will assist and be in charge of the program progress (See attached job description and remit)

- Chairman
- Program Director
- Assistant Program Director (one/site)
- Sub committee:
 - Curriculum
 - Resident progress
 - Internal review
 - Examination
 - Grievance
 - Research

Training Faculties

There must be sufficient number of qualified trainers with adequate for instruction and supervision of the trainees (see Table 1).

Will be appointed by internal medicine scientific committee

Must be qualified in general medicine or one of its branches

Must show evidence of maintaining their CPD credits

CVs of all staff must be available in the file

Must show commitment for educating residents

All trainers must have or undergo some form of training in medical education in the area of:

- Curriculum design and setting up educational objectives
- Teaching methods
- Assessments

Facility Requirement

Tertiary facility:

Tertiary facility should have the following:

Clinical facility:

- 10-15 beds per Clinical Teaching Unit (CTU) of various general medicine cases. Medicine specialty (it is preferable to have as much specialty as possible):
 - 5-10 beds Gastroenterology
 - 5-10 beds Neurology
 - 5-10 beds Nephrology
 - 5-10 beds Respiratory
 - 5-10 beds Infectious Diseases
 - 5-10 beds Cardiology
 - 5-10 beds Hematology
 - 5-10 beds Oncology
 - 5-10 beds Endocrinology
 - 5-10 beds Rheumatology

Critical Care Facility

10-20 beds ICU

5-10 beds CCU

4-8 beds high dependency

Active ambulatory facility covering general medicine and its specialty
Diagnostic facility.

Cardiac catheterization

Treadmill

Echo

GI endoscopy

Bronchoscopy

Hemodialysis services

EEG

NCS/EMG

PFT

Emergency department

Triage service

Resuscitation area

Observational area

Other services:

Pharmacy

Medical Imaging

Laboratory

Dietary services

Physiotherapy

Easily accessible (24 hrs) patient's record

Educational services

Conference rooms

Audio visual equipments

Internet access

Library with recent books and journals relevant to general medicine and its specialties

Easily accessible hospital policies and procedures dealing with: needle sticks injuries; lifting policy; infection control.

Secondary Care facility:

The secondary care facility may be accredited for some components of the program that matches the requirement in tertiary facility.

Hospitals should also ensure that physician trainees are exposed to an environment that fosters and supports quality assurance and clinical practice improvement.

Table 1: Basic faculty coverage and teaching responsibilities requirement for various rotations

Rotation	Residents/faculty staff	Hours/wk of teaching (rounds, dedicated, etc)
In patient IM rotation (CTU)	4-6	4.5
In patient critical care (CCU/ICU)	4-6	4.5
Emergency medicine rotation	2	5
Ambulatory rotation	1	5

- On call rooms and resident lounge must be available
- Adequate secretarial support to Program Directors per Training Site
- IM program provide 48 months of supervised educational training to its trainee
- Comprehensive curriculum must be available with clearly defined general and specific objectives
- Objectives of all rotation (see appendix)
- Yearly master rotation and duration as per appendix
- On call: As per OMSB Bylaws
- Clinical teaching units (CTU) are in-charge of patients' care during core rotation in general medicine inpatient. The make up, role of each member of the team, content, and teaching activities is defined as per appendix.

Resident Affair

- Eligibility criteria:
 - Graduates from medical schools recognized by MOH, Oman
 - Successful completion of one-year internship
 - Filling up OMSB application form
 - Passing interview by the panel set up by the internal medicine committee
- Number of residents is as set up by the IM scientific committee
- Chief resident and his assistant(s); one per site (see appendix)
- Rule and regulation regarding resident progress and grievances procedure (see appendix)

Evaluation

- Resident evaluation:
 - Monthly evaluation using OMSB form
 - End of the year written evaluation
 - 1/2 yearly evaluation by PD using OMSB form
 - Mid of training evaluation (upon completion of year 2):
 - End of training evaluation (upon completion of year 4):

- Faculty, rotation, program, and facility evaluation using the available OMSB forms

References:

OMSB accreditation forms

ACGME Program Requirements for Residency Education in Internal Medicine:
http://www.acgme.org/acWebsite/RRC_140/140_prIndex.asp

Allen H Goroll, et al. A New Model for Accreditation of Residency Programs in Internal Medicine. *Ann Intern Med.* 2004;140:902-909

Training Centers:

1. Sultan Qaboos University Hospital
2. Royal Hospital\
3. Armed Forces Hospital.
4. Bowsher Polyclinic

PARTICIPATING TEACHING FACULTY

The following are the teaching faculty and members of the Scientific Committee of OMSB in Internal Medicine 2010

1. Dr. Omar Awadh Salim Al-Rawas	Chairman
2. Dr. Noor Badar Al-Busaidi	Program Director
3. Dr. Faryal Ali Khamis Al-Lawati	Asst. Program Director
4. Dr. Dawood Ahmed Suleiman Al-Riyami	Asst. Program Director
5. Dr. Mohammed Khamis Al-Mukhaini	Member
6. Dr. Kadhim Jaffer Sulaiman	Member
7. Dr. Abdullah Abdulrhaman Salim Balkhair	Member
8. Dr. Seif Salim Al-Abri	Member
9. Dr. Ali Saif Al-Mamari	Member
10. Dr. Bassim Jaffar Abdul Rahuin Al-Bahrani	Member
11. Dr. Abdul Hakeem Yaqoob Al-Hashim	Member
12. Dr. Adil Barakat Al-Riyami	Member
13. Dr. Khalid Mohammed Al-Naamani	Member
14. Dr. Aftab Ahmed Al Siddiqui	Member
15. Dr. Najib Zahran Hamood Al-Rawahi	Member

PARTICIPATING TEACHING FACULTY FOR ROYAL HOSPITAL

1. Dr. Ali Aziz Mohd Al-Lawati
2. Dr. Hilal Nasser Al-Muslahi
3. Dr. Rashid Majid Shahrabani
4. Dr. Salim Omar Salim Al-Harhi
5. Dr. Yaqoub Salam Marhoun Al- Mahrouqi
6. Dr. Nabil Bin Mohsin Bin Salmeen Al-Lawati
7. Dr. Sameh Nassif Wahba
8. Dr. Khaleel Ibrahim A. Jabar Al-Shaikhly
9. Dr. Dimitrije Ponomarev
10. Dr. Mohammed El-Deeb
11. Dr. Abdullah Amer Sultan Al-Riyami
12. Dr. Ahmed Seif Al-Sinani
13. Dr. Amal Upadhyay
14. Dr. Amitabh Jha
15. Dr. Humaid Al-Wahshi
16. Dr. Juma Al-Lawati
17. Dr. Nabil Mohd Lawati
18. Dr. Ramnath Misra
19. Dr. Mohammed Al-Lamki
20. Dr. Nasser Hamed Salim Al-Busaidi
21. Dr. Mahmood Al-Saadi

**PARTICIPATING TEACHING FACULTY FOR
SULTAN QABOOS UNIVERSITY HOSPITAL**

1. Dr. Arunodaya R. Gujjar
2. Dr. Ali Talib Ali Al-Hinai
3. Dr. Batool Hassan
4. Dr. Ikram Ali Burney
5. Dr. Jamal Abdulaziz . Sallam
6. Dr. Jayakrishnan B. Nair
7. Dr. Jojy George
8. Dr. Hatem Lutfi Al-Farhan
9. Dr. Hafidh Aqeel Ahmed Al-Hadi
10. Dr. Mansour Mohammed Sallam
11. Dr. Masoud Bakhit Salim Kashoob
12. Dr. Mohammed Hamed Mubarak Al-Ghailani
13. Dr. Mansour Saif Al-Moundhri
14. Dr. Masoud Yahya Masoud Al-Maskari
15. Dr. Mehar Ali Ayyaril Karikulath
16. Dr. Omayma Taha Mekki El-Shafie
17. Prof. Nicholas Woodhouse
18. Dr. Poovathoor. Chacko Jacob
19. Dr. William James Johnston
20. Dr. Dr. Saif Ahmed Khan
21. Dr. Ramachandiran Nandhagopal
22. Dr. Juma Khalfan Abdullah Al-Kaabi
23. Dr. Abdullah Al-Asmi

OMSB RESIDENT EVALUATION FORMS

- ❖ RESIDENTS MONTHLY EVALUATION**
 - ❖ ROTATION EVALUATION**
 - ❖ CONSULTANT / STAFF EVALUATION**
- RATING**

RESIDENT MONTHLY EVALUATION FORM

Name:..... OMSB #:..... Program:

Resident Level: R I R II R III R IV R V R VI

Date of Rotation: From / /20 To / / 20 Block#:..... .Rotation:.....

Date of Rotation: From: To:.....Resident level:.....

No Criteria Unsatisfactory Borderline Satisfactory Above Average Outstanding N/A
1 2 3 4 5

I. MEDICAL KNOWLEDGE

1-	Basic theoretical knowledge						
2-	Clinical knowledge						

II. PATIENT CARE AND TECHNICAL SKILLS

3-	History and physical examination.						
4-	Data interpretation and synthesis of differential diagnosis.						
5-	Decision making and management plan.						
6-	Organization of work and time management						
7-	Verbal and written communication.						
8-	Provides comprehensive care						
9-	Ability to manage emergency conditions.						
10-	Consultation skills.						
11-	Technical skills and procedures.						

III. PROFESSIONAL ATTRIBUTES

12-	Punctuality.						
13-	Works effectively in a team environment						
14-	Reports facts accurately, including own errors						
15-	Attitude to patient and staff.						
16-	Ability to supervise.						
17-	Recognizes own limitations						
18-	Maintains code of ethics, honesty & patient confidentiality.						

III. Scholarly Contributions

19-	Attends and contributes to rounds, seminars and other learning events						
20-	Accepts and acts on constructive feedback						
21-	Teaching skills (Peers)						
22-	Ability for self directed learning						

	Overall Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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General Comments (including strengths, weakness and needs for special attention)

Date of Rotation: FromTo

Name and Signature of Supervising

Consultant.....Date.....

Name of Resident:.....**Signature**:

.....**Date**:.....

Official Use:-

$$\frac{\text{Total Score}}{\text{No of items evaluated}} \times 20 = \dots\dots\dots \%$$

ROTATION EVALUATION FORM

Name (Optional) : OMSB # :

Program : Hospital: Rotation:.....

Date of Rotation: From:..... To: Resident Level:.....

Rotation:	Unsatisfactory 1	Deficient 2	Good 3	V. Good 4	Outstanding 5	N / A
1. The number of in-patients cases seen was appropriate.						
2. Inpatients cases demonstrated a broad range of clinical problems.						
3. The number of out-patients cases seen was appropriate.						
4. Outpatient cases demonstrated a broad range of clinical problems.						
5. The opportunity to see acute emergency cases.						
6. The opportunity to see consultations.						
7. Ward rounds.						
8. Clinical Meetings / Lectures.						
9. Journal Club						
10. Audit (e.g. Morbidity / Mortality)						
11. Clear learning objectives.						
12. The number of procedures adequate.						
13. Demonstration & Supervision of techniques.						
14. Level of responsibility in patient care.						
15. Patient management.						
16. Quality / quantity of teaching on rotation.						
17. My total workload was appropriate for the time available.						
18. Adequate feedback from consultant / staff on performance.						
19. Support and supervision was available and adequate.						
20. Opportunity to do research.						
21. Overall quality of rotation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Strengths:

Areas for improvement

Signature of Resident: Date:

Official Use:-

Total Score

_____ X 20 = %

No. of items evaluated

RATING

UNSATISFACTORY ROTATION EVALUATION FORM

OUTSTANDING

Out patients	Do not see new patients. No time for/interest in discussion with consultant. Large number of patients. Poor organization.	↔	See new and old patients. Time for discussion with consultant. Reasonable time with patients. Well organized.
Acute Emergency	Advice/help not easy to obtain. Consultant difficult to find/contact. Also not keen to come and assist.	↔	Advice/help readily available. Consultant always happy to be phoned/consulted/give assistance.
Ward rounds	Rarely consultant led. Rapid decisions, little discussion. Junior views not listened to.	↔	Usually consultant led. In depth presentation/discussion of patients. Adequate time
Clinical meetings / lectures	Poor consultant support. Badly attended. Rigid non innovative programme. Not multi-disciplinary. Held outside normal working hours. Little input from consultants.	↔	Consultant led. Well attended by all grades. Varied programme. Often multi-disciplinary. Regularly held in normal seasonal time. Juniors encouraged present/take part.
Journal club	Juniors expected to do all reviewing. Poor consultant attendance. Didactic discussion?	↔	Equal consultant/junior participation. Articles prévised and discussed.
Audit	Morbidity/mortality only. No in-depth review of clinical practice/problems. Does not lead to change clinical practice. Retrospective data. Juniors expected to collect all data. Non constructive or threatening atmosphere.	↔	Proper audit cycle utilized. Lead to change in clinical practice. Prospective data collection. Juniors assisted with data collection. Friendly, non confrontational atmosphere.
Demonstration of techniques	Works on own. Poor senior support. Not shown/taught new or more advanced techniques.	↔	Taken through procedures. Graduated discussion about patients with consultants.
Patient management	No guidelines. No trust Consultant questions all decisions. Consultant does not back trainee.	↔	Consultant readily offers help/advice. Trainee given guidelines. Trusted to use own initiative/judgment. Consultant back trainee.
Adequate feedback from Consultants	Poor or absent appraisal. No specific protected time for discussion of performance. Consultant not frank about performance. Mainly critical, rarely praises.	↔	Regular appraisals in protected time. Consultant opens about strengths, weaknesses and areas for improvement.
Research Opportunity	No fixed time allowed. Any identified time often not taken due to other pressures.. Clinical work precludes time for research	↔	Fixed session/protected time allocated. Arrangements made to free trainee of some clinical work to allow research activity.

CONSULTANT/ STAFF EVALUATION

Name of Consultant / Staff:

Program: Resident Level:

Rotation: Hospital:

Date of Rotation: From:..... To:

1. How many weeks did you work with this consultant / staff?
Up to 2 3 or 4 5 or 6 7 or 8 8+
2. The frequency of your contacts with the teaching consultant / staff was: (per week)
1 or less 2 3 4 5 or more

Consultant	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	N/A
1. Made rounds regularly.						
2. Provided quality teaching.						
3. Was well organized.						
4. Stimulated enthusiasm for knowledge.						
5. Demonstrated breadth of knowledge.						
6. Established good rapport with resident.						
7. Provided direction and feed back.						
8. Was approachable for help and feedback.						
9. Encouraged resident to take appropriate responsibility.						
10. Promoted a comprehensive approach to patient care.						
11. Provided a good role model as a physician.						
12. Was available with enough time for resident support and supervision						
13. Allowed resident protected teaching time.						
14. Provided opportunity for performing procedure and techniques.						
Comments:						
Strengths:						
Areas for improvement						

An Average Score: < 30% Unsatisfactory, 30-60% Satisfactory, 60-80% V. Good, > 80% Excellent

Name of resident (optional) Date:

Office Use:-

$$\frac{\text{Total Score}}{\text{Number of evaluation items}} \times 20 = \dots\dots\dots \%$$