Department of Internal Medicine

College of Medicine

King Khalid University Hospital

King Saud University

Course 441-Medicine Clerkship Manual

Revised

2010

**Curriculum Proposal Form**

|  |  |
| --- | --- |
| Course Name : Internal Medicine | اسم المقرر: ممارسة الطب الباطني |
| Course Code & No : 441 | رقم المقرر ورمزه: طبب 441 |
| Credits : 11 ( 8 +3 )\* | الساعات المعتمده: 11 ( 8+3) |
| Duration : 12 weeks | مدة المقرر: 12 أسبوع |
| Study year: 5th year | سنة الدراسة: الخامسة |

## \*8 = clinical teaching 3 = tutorials

**Curriculum revision date**: 7/ 10/ 1430 (26/ 09 / 2009)

**Revised by:**

**Course Development committee:**

|  |  |  |
| --- | --- | --- |
| **Position** | **Title** | **Name** |
| Chairman Department | Assoct.Professor. | Dr. Abdulrahman Al Jebreen |
| General Course organizer | Asst. Professor. | Dr. Anwar Jammah |
|  | Asst. Professor. | Dr. Waleed AL Hamoudi |
|  | Asst. Professor. | Dr. Nahla Azzam |
|  | Asst. Professor. | Dr. Ahmed Al Hersi |
|  | Asst. Professor. | Dr. Amer Aleem |
|  | Asst. Professor. | Dr. Ayman Abdo |
|  | Asst. Professor. | Dr. Hussam Al Faleh |
|  | Asst. Professor. | Dr. Hussein Al Arfaj |

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**INTRODUCTION:**

Patients seek medical attention for various reasons. These include:

1. Prevention of illness.
2. Relief of physical symptoms.
3. Control or preferably cure of an illness.
4. To find out about the prognosis of their illness.
5. Emotional comfort.

In order to address these needs, physicians need to be able to perform *two different, but related, tasks:*

1. To arrive at a *formulation of the patient’s problem*(s), that includes a provisional or established diagnosis, and possibly a differential diagnosis. (Patients often have more than one problem at a time, and thus a “problem list” is needed.)
2. To develop a *management plan* for their problem(s).

### The goal of the medicine clerkship rotations (Course 441 Med.) is to assist the student in developing their competency in these tasks in the range of problems addressed by the discipline of internal medicine up to the level required for. students to carry on their practice as general practitioners or continue their postgraduate training in any discipline, including internal medicine, family medicine and other specialty programs.

**OBJECTIVES OF COURSE 441-MEDICINE:**

At the end of the 441-Medicine course students are expected to:

1)Master the skills of **history taking and physical examination**.

With the ability to Identify abnormal physical findings.

2)Have a systematic and problem based approach to the diagnosis and **management of common medical conditions.**

3)Be able to interpret the results of commonly use **diagnostic tests.**

4)Be able to recognize patients with **life threatening conditions** & have a safe and organized approach to the diagnosis and management of common medical emergencies.

5)Be able to **communicate effectively** ,both orally and in writing with patients and other health care professionals

6)Be able to practice **student centered learning** in his/her free time using available resources.

These objectives will be realized by enforcing the ACTIVE INVOLVEMENT of the medical student in his/her own theoretical teaching and to be an *ACTIVE MEMBER* of the hospital team managing the patients rather than being merely an observer. Thus, it is not surprising that the bulk of the final assessment of the medical student will depend heavily on *HOW ACTIVE* the medical student was in the above mentioned tasks.

Appendix D- describes the skills to be acquired by medical students by the end of 441-Course in Medicine.

**Description of the Course**

The course will be for twelve (12) weeks,

The student will be posted as sub-intern to a consultant of any sub-specialty of

Medicine, either in King Khalid University Hospital (K.K.U.H), Security Forces

Hospital (S.F.H), and Riyadh Medical Complex (R.M.C), for six (6) weeks. In either end or at the beginning of the 7th week, they will be changed to the other specialty of Medicine or other hospital as the case maybe.

Each rotation is good for six (6) weeks; therefore each student will be rotated twice.

At the end of each rotation, the staff member will fill a form marking the student's attendance, behavior, ability to take history, conduct physical examination, etc… This marking will be reflected in the **CLINICAL ASSESSMENT MARKS.**

Each group will be divided to small subgroup 2 to 3 student and they will be attached to one of the consultant in the unite they rotate with. The student in the small subgroup must arrange one meeting at least during each week with the consultant to discuss the cases they see, the log book, and their performance during the week.

**1.  ROLE OF THE STUDENT ON THE WARD TEAM**

**Principle:**  Learning at the clerkship level is best achieved by assuming, in a gradual manner, the roles played by real physicians. Therefore, the student should increasingly assume real and meaningful responsibility for patient care, and not act merely as an observer.

**How the principle is realized:** The student becomes ***a full member of the medical team***, which includes a consultant, a senior registrar/resident, one or more first-year residents, intern and other students.

The elements of being a full team member include ***the following tasks***:

1. Performing admission history and physical examination of minimum of 2-3 patients/week as assigned by the supervising consultant.
2. Attempting to develop a differential and provisional diagnosis and to formulate a problem list.
3. Documenting the details of the history, physical examination, impression and plan in the students Log Book (see below).
4. Presenting (orally) a summary of their findings to the medical team during daily rounds, and at other occasions such as the unit round.
5. Follow up of one's own patients on a regular basis with respect to the progress of their various problems.
6. Documenting in the student’s Log Book what is happening with the patient (i.e. writing progress notes regularly).
7. Communicating with other people involved in the care of patients under their primary care e.g. (consultants, residents, consultation services, nurses and others).
8. Gathering and reviewing relevant data, including laboratory and radiological data.
9. Presenting at least one case history per week to the assigned consultant

* An example of writing a proper clinical progress note is provided in **Appendix A**.

**2-ROLE OF THE STUDENT IN THE EMERGENCY ROOM**

Principle: Taking on call duties in E/R is an essential component of learning in Internal medicine as this is where acutely ill patients are first assessed.

**How the principle is realized:**

**1-On-call schedules will be arranged so that every medical student will be on call three to four times during the cycle, excluding weekends & final exam weeks.**

**2- Students are should join the on call medical registrar during their assessment of patients in E/R.**

**3-Students are expected to start their duties at 4PM and finish at 10PM.**

**4-Next morning students should attend their usual rounds &teaching sessions.**

**5-Every student is expected to take at least one full history & physical examination to be presented to his consultant next day.**

**6-The registrar on call will sign the student’s attendance sheet.**

**7- The evaluation of emergency room duties will be included in the clinical assessment section.**

**3. INTERACTIONS WITH THE “SENIORS”**

**Principles:**

1. The consultant is the individual best positioned to provide both "formative" feedbacks to students (advice about how to improve based on the student's performance so far) and a final judgment about the student's performance.
2. The consultant is the most important internal medicine teacher the student will encounter. The attending serves as a professional role model, a source of clinically relevant knowledge, and a teacher of clinical skills.
3. The interns, residents, and registrars will be the daily supervisors of the medical students.

**How the principles are realized:**  the student will join the medical team in their daily rounds and present their own patients accordingly. The consultant will provide his/her own final assessment of the medical student taking in consideration also an overall feedback from the various team members. The medical student is encouraged to act as a ***SHADOW*** to his/her particular team and to be actively involved in its various activities.

**4. TUTORIALS:**

One tutorial per week on management of medical emergencies for the whole group will be given in the afternoon of every Wednesday. It can be given in Quiz format ,case scenario format or interactive discussion (See schedule below: **Appendix B**)

**5. NEUROLOGY SESSIONS:**

* The **objective** of these sessions is to increase exposure of students to patients suffering from conditions seen mainly in the sub-specialized division of neurology.
* All students will assemble every Tuesday, 10:00-12:00 noon in the Medical Ward 32-B Level 3 as arranged by Neurology Division. Each student should have 6 sessions during the course.
* Each session will have one long case and one or two short cases. The students will be divided in two groups accordingly.
* 32 – B Nurses at the station of Neurology Ward should notify the students about the case to be used for long case presentation. Notice should be given a day before the presentation no later than 12:00 noon.
* The assigned student will prepare the case one day earlier and present it with complete history and physical examination, Provisional diagnosis, differential diagnosis and plan for the investigation and management. He may then be asked by the teacher other things related to the case presented. Discussion is open then to the whole class and exchanged of questions is allowed. The student could be asked to demonstrate abnormal physical findings and scans of the patients.
* The students assigned for short cases should be asked to do a physical exam of the patient. Student will be asked about the clinical findings after the examination; Physical examination should be timed and evaluated by the teacher. Each short case should take about 30 minutes.

**6. MEDICINE STUDENT MORNING ROUND:**

Clinical approach teaching. See Appendix D .

**7. BEDSIDE TEACHING**

The objective of bed side teaching is to help the student utilize his/her diagnostic skills to formulate a problem list for individual patients & be more familiar with how to investigate and manage patient’s specific medical conditions.

Each group of students will have one session/week with medical consultants of different subspecialties (excluding neurology) in which specific cases will be given to the students beforehand to take the history & physical examination & then the student will present the case to the consultant who will then discuss with students the patient’s problem list, how to investigate them, interpret the results of investigations and put forward a management plan & follow up. (See the attached schedule).

**Recommended References**

**A. Textbooks of Medicine**

Any one of the following excellent books:

1. Clinical Medicine - A textbook for Medical students and doctors. P. J. Kumar and M. L. Clark “latest edition”.

2. Textbook of Medicine - By Souhami and Moxham, latest edition

3. Davidson’s Principles and Principles of Medicines - C. R. Edward and Ian, A.D. Bonchir, latest edition

**B. Physical Examination**

Any one of the following books:

1. Clinical Examination - 2nd Edition by Nicolas Talley and Simon O’Connor
2. A guide to physical examination and history taking by Barbara Bates
3. Macleod’s Clinical Examination by John Munro and C. Edwards

Executive Summary of Mark Distribution:

Shown below a brief overview of the current mark distribution of different assessments in the course 441-Medicine:

1. Ward Clinical assessment: 10% of the total mark

2) Mid Term Exam 30% of the total mark

3) Final OSCE exam: 60% of the total mark

For each student, it is mandatory to obtain (60%) in the final clinical (OSCE) to pass this course.

**ATTENDANCE**

Attendance is continuously monitored and kept to see whether students will meet the required percentage of attendance set by the University.

As early as possible, any student noticed to have poor attendance would be given warning letters to call their attention and give them a chance to improve. As a rule, students should have attended **at least 75%** of each of the course clinical & theoretical activities. Names of students who will have less than 75% attendance will be submitted to the Vice Dean – Academic Affairs Office and will not be included in the exam until the University gives their approval.

**IMPORTANT DATE TO REMEMBER:**

**● CLASSES:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Start On** | **Saturday** |  |  |
| **End On** | **Wednesday** |  |  |

1. **FIRST ROTATION:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Start On** | **Saturday** |  |  |
| **End On** | **Wednesday** |  |  |

1. **SECOND ROTATION:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Start On** | **Saturday** |  |  |
| **End On** | **Wednesday** |  |  |

**□ FINAL EXAMINATION:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Start On** | **Saturday** |  |  |
| **End On** | **Wednesday** |  |  |

3. **Assessment Exams**

* Theory Exam

This is a clinically-oriented theoretical assessment that involves Single-Best MCQ’s through patient **case scenarios**.

**Example of MCQ:**

A 78-year-old man is brought to the emergency department by family members because of increasing somnolence and “not acting normally” for several hours. The patient has hypertension and type 2 diabetes mellitus. Current medications are hydrochlorothiazide, pravastatin, low-dose aspirin, and metformin.

On physical examination, temperature is 38.3 °C (101 °F), heart rate is 100/min, and blood pressure is 110/62 mm Hg. Jaundice is present. He is lethargic and oriented to person and place but not to year. The right upper abdominal quadrant is tender to palpation without guarding. The remainder of the examination is unremarkable.

Laboratory Studies

Hemoglobin 12.8 g/dL

Leukocyte count 18,600/μL, with 86% segmented neutrophils

Aspartate aminotransferase 186 U/L

Alanine aminotransferase 230 U/L

Total bilirubin 4.1 mg/dL

Alkaline phosphatase 260 U/L

Abdominal ultrasonography shows normal liver architecture, a common bile duct caliber of 9 mm (normal <6 mm), multiple gallstones, and no evidence of gallbladder wall thickening or pericholecystic fluid. Broad-spectrum antibiotics are begun.

Which of the following is the most likely diagnosis?

1. Top of Form
2. Acute hepatitis A
3. Cholangitis
4. Cholecystitis
5. Pancreatitis

B

* OSCE: (**O**bjective **S**tructured **C**linical **E**xamination)
* This part will include both of the short clinical cases in addition to the oral part in the old system:
* **Rational:** **this will result in a more objective and standard exam by exposing the same students to the same examiners asking the same questions and have the ideal answers and mark distribution, with more efficient & effective use of time and staff.**
* It includes **8 stations**, and each station lasts for **8 minutes,** sothe total time for **1 OSCE is 64 minutes.**
* The stations are divided into the following:

1. **focused History.**
2. **Focused Clinical Station (Acute & office).**
3. **Examination stations (3-4)**
4. **Ethics station**
5. **Data Station.**
6. **Rest Stations.**

* 10-14 students will undertake the OSCE at one time, followed by a 8-minute break,

then another 10-14 students will undertake the OSCE.

* Each student will be provided with 10 stickers that contain his/her name and university number that he/she will handle to the examiners to avoid wasting time in getting this information during the start of each station.

* **DATA INTERPRETATION:** It should be emphasized that the goal here is *not to test memory recall abilities but rather to* **test clinical approach** *to a brief clinical scenario through proper interpretation of a laboratory investigation.* Here are some examples of possible stations in each subspecialty:
* **CVS:**
* ECG (e.g: AMI, atrial fibrillation, ventricular fibrillation, LVH..etc)
* **Respiratory:**
* ABG (e.g.: acute respiratory acidosis..etc)
* PFT (e.g.: obstructive lung disease..etc)
* CXR (e.g.: T.B...etc)
* Pleural fluid (e.g.: exudate..etc)
* **Endocrine:**
* Abnormal glucose control (e.g: DKA)
* Thyroid function test
* Ca homeostasis
* **Rheumatology:**
* Joint aspirate (e,g: septic versus inflammatory)
* **Hematology/Oncology:**
* CBC: (e.g: anemia, PRV…etc)
* **GI:**
* Abnormal liver enzymes (e.g.: acute hepatitis..etc)
* Ascitic fluid aspirate (e.g.: exudate..etc)
* **Nephrology:**
* Electrolyte disturbance (e.g.: hyponatremia..etc)
* Acid-base imbalance (e.g.: metabolic acidosis..etc)
* **Neurology:**
* CSF (e.g.: meningitis..etc)
* **Infectious Diseases:**
* Urine C/S (e.g: UTI)
* Blood C/S (e.g: Staph. Septicemia in a drug addict..etc)

**Example # 1:**

CXR of a 60 year old man with cough, fever, and sweating for 4 weeks.

1. **Interpret the main abnormal findings of the CXR? ( 2 marks)**
   * Ideal answer: Right upper lung lobe infiltration
2. **List 3 differential diagnoses? (3 marks)**
   * Ideal answer: a. Pneumonia

b. T.B \_

c. Cancer \_

1. **Mention 3 initial and essential laboratory investigations? (3 marks)**
   * Ideal answer a. Sputum for C/S

b. Sputum for AFB

c. CBC \_

1. **Mention the initial antibiotic class of choice? (2 marks)**
   * Ideal answer Cephalosporin or a penicillin

**Example # 2:**

70 year old man with history of DM, HTN and hypercholestolemia. He presents with the current ECG. (ECG is provided that shows an inferolateral MI).

1. **Interpret the ECG ( 1 mark )**

* Ideal answer: Inferolateral acute ST elevation myocardial infarction

(but If answered: Inferior STEMI: 1/2 out of 1 Mark)

1. **How would you manage this patient? ( 6 marks )**
   * Ideal answer
     + 1. ASA = 2 marks
       2. Heparin = 1 mark
       3. B-blocker = 1 mark
       4. Fibrinolytic = 2 marks

3. **How would you decide about successful reperfusion? ( 3 marks )**

* Ideal answer

1. Resolution of the ischemic chest pain
2. Resolution of the ST-segment elevation by at least 50%
3. Reperfusion arrhythmia (e.g. AIVR)
   1. **FOCUSED CLINICAL EXAMINATION:**

* **This is similar to the short case** format in the old system, but is more focused, e.g.: instead of asking about the CVS examination of a patient which is not practical to be done properly in 7 minutes as being done in the current system, the medical student will be asked to examine only the JVP and demonstrate it to the examiners over the 7minutes period allotted to that station.
* Here are some examples of possible stations in each subspecialty:

**●CVS: ●Hematology/Oncology:**

• Precodium: murmurs, mechanical valve sounds • Lymph nodes

• Peripheral Pulses **●GI:**

• JVP •Liver

• B.P measurement •Ascitis

**●Respiratory: ●Nephrology:**

• Chest (Percussion & Auscultation) •Kidney

**●Endocrine: ●Neurology:**

• Thyroid •Specific Cranial Nerve (e.g.: 7th **●Rheumatology:**  cranial nerve,..etc)

• Knee •Specific Motor on sensory deficil

• Hands •Cerebellar exam

***FOCUSED CLINICAL ACUTE SCENARIO***

***ASSESSMENT FORMAT***

## H.Z. is a 19 year old female known Asthmatic, came to the emergency complaining of severe SOB, Cough. And wheezing She looks exhausted. ACUTE ASTHMA

## What is your immediate action? Start 0-1 min

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Immediate Actions*** | **Done complete (1)** | **Not complete (0.5)** | **Not done (0)** | **Notes**  **Give only if asked** |
| Airway, Breathing and Circulation |  |  |  | Stable |
| Assessment of Vital signs & O2 sat. *(1/2)*  Establish IV line *(1/2)* |  |  |  | BP 111/66, HR 110, Temp.37, RR 24, sat 86% on RA |
| Start Oxygen to keep sat >95% |  |  |  |  |

**Take focused history? After 1 -4min**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Recent URTI |  |  |  |  |
| Fever |  |  |  | Low grade fever for 2d |
| Previous attack.& hospitalization |  |  |  | Hx of 2 hospital admissions, once in ICU. |
| Triggers:(occupation, smoking, exercise) |  |  |  |  |
| Night symptoms |  |  |  | yes |
| Does she attend follow-up |  |  |  | Never attended |
| Medications. *(1/2)*  Allergies*(1/2)* |  |  |  | Non compliant |
| **On examination she has bilateral wheezing and she using her accessory muscles**  **Mention 6 Investigations you will do?4-6min No mark for more** | | | | |
| Peak expiratory flow rate PEFR |  |  |  | <200 L/min |
| Blood/sputum C/S |  |  |  |  |
| CBC*(1/2)*  U/E, creat*(1/2)* |  |  |  |  |
| ABG |  |  |  | PO2 58, PCO2 22 |
| CXR |  |  |  | Rt mid-zone consoled. |
| **What is your Management plan (only 4)?6-8min** *No mark for more* | | | | |
| Ventolin Neb |  |  |  |  |
| Atrovent Neb |  |  |  |  |
| Sys. Steroids |  |  |  |  |
| Antibiotics |  |  |  |  |

***FOCUSED CLINICAL EXAM***

***ASSESSMENT FORMAT***

**39 year old female pregnant with history of unilateral leg swelling. Examine this patient for DVT.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Examine the leg for DVT** | | | | |
|  | **Done Complete (1)** | **Not Complete (0.5)** | **Not Done (0)** | **notes** |
| Self introduction |  |  |  |  |
| Explain the procedure |  |  |  |  |
| * **General** | | | | |
| Temp (fever) |  |  |  |  |
| * **Inspection** |  |  |  |  |
| Leg swelling |  |  |  |  |
| Erythema |  |  |  |  |
| Superficial thrombophlebitis |  |  |  |  |
| Superficial venous dilation |  |  |  |  |
| * **Palpation** |  |  |  |  |
| Edema |  |  |  |  |
| Temp.  (Asymmetric skin warmth/coolness) |  |  |  |  |
| Calf asymmetry measurement  *10 cm below and above tibial tuberosity* |  |  |  |  |
| Palpate cord  from popliteal fossa, |  |  |  |  |
| Calf Tenderness |  |  |  |  |
| **Mention 2 most accurate investigations to rule in or to rule out DVT- mention 2** | | | | |
| Doppler ultrasound |  |  |  |  |
| Venography |  |  |  |  |

**APPENDIX - A**

**Sub-intern Progress Note**

* 56 Y/O man who was admitted yesterday because of unstable angina CCS class III in the last 1 month. He has been having recurrent C/P overnight awakening him from sleep requiring multiple NTG puffs. +ve SOB & sweating.
* P/Ex: 170/85, 95/min reg. 90% O2 Sat on 2L FiO2. Chest: bilateral basal crackles. JVP: 5cm ASA with +ve AJR. S1+S2+ESM 2/6 @ the apex. +ve L.L edema. Abd.: NAD.
* Invx: ECG: deeply inverted T-waves in the anterior leads. TnT: -ve. FBS:10.4. T.Chol.:7.3. LDL: 5.5.
* **Issues (Assessment):**

1. **Unstable Angina:**

Worsening to class IV with evidence of CHF

P: To discuss with the S.R/Consultant regarding transfer to CCU and start I/V NTG, heparin, IIb/IIIa-inhibitors and for possible urgent coronary cath. Today (?LAD lesion)

1. **New CHF:**

P: D/C IVF. I/V lasix 40mg then R/A. Start

Lisinopril 10 mg OD. CXR. Echocardiography to

check LV function.

1. **D.M (new Dx):**

P: Start Gliclazide (will check the dose). Consult

endocrine service. Gluco-check QID. Check for

microalbuminurea.

1. **Uncontrolled HTN:**

P: B.P Goal is less than 135/80 b/c of D.M. Will

follow it up after above meds take effect.

1. **Hypercholestrolemia:**

P: start Lipitor 40mg OD.

**Dr.M.ALQaaaaa**

**Subintern**

**Pager: 23xx**

**APPENDIX - B**

TUTORIAL ON EMERGENCY MEDICINE

**LOCATION**: Room: , level **DAY:** Wednesday (1:00 – 3:30 p.m.)

|  |  |  |  |
| --- | --- | --- | --- |
| **DATE** | **TIME** | **TOPIC** | **TUTOR** |
|  | 9:00 – 12:00 | Ethics | Dr. Leena Al Qasim |
|  | 1:00 – 1:30 | Liver Function Test | Prof. Saleh Al Amri |
| 1:30 – 3:30 | Arterial Blood Gases (ABG) + | Dr. |
|  | 1:00 – 3:30 | E.C.G. - Arrythmia and Management | Dr. Hussam Al Faleh |
|  | 1:00 – 2:30 | Acute G.I. Bleeding | Prof. Ibrahim Al Mofleh |
| 2:30 – 3:30 | Acute Hepatocellular Failure | Dr. Ayman Abdo |
|  | 1:00 – 2:30 | Chest x-ray (CXR) | Dr. Esam Al Hamad |
| 2:30 – 3:30 | Pulmonary Embolism | Dr. Ahmed Bahammam |
|  | 1:00 – 3:30 | a) Meningitis  b) Malaria  c) Infective Endocarditis | Prof. Abdulkarim Al Aska /  Dr. Fahad Al Majid |
|  | 1:00 – 2:30 | Infectious Hazards | Dr. Moqbil Al Hedaithy |
| 2:30 – 3:30 | Electrolytes Imbalance | Dr. Mohammed Al Ghuneam |
|  | 1:00 – 2:30 | Acute Obstructive Airway Disease | Dr. Abdulaziz Al Zeer |
| 2:30 – 3:30 | Hypertensive Crisis | Dr. Abdulkarim Al Suwaida |
|  | 1:00 – 3:30 | Endocrine Emergencies   1. Diabetic Ketoacidosis 2. Thyroid Emergencies 3. Adrenal Crisis | Prof. Riad Sulimani |
|  | 1:00 - 3:30 | a) CBC Abnormalities and Diagnosis  b) Coagulation – Abnormalities | Dr. Abdulrahman Al Diab |
|  | 1:00 – 2:30 | Inflammatory Polyarthritis | Prof. Abdulrahman Al Arfaj |
| 2:30 – 3:30 | Glomerulonephritis – acute kidney disease | Prof. Jamal Al Wakeel |
|  | 1:00 – 3:30 | ECG General /Ischemic Heart Disease | Dr. Khalid Al Habib |
|  | 1:00 – 2:15 | Acute Stroke – Diagnosis and Management | Dr. Radwan Zaidan |
| 2:15 – 3:30 | Status Epilepticus | Dr. Mansour Al Moallem |

**APPENDIX - C**

***SKILLS TO BE ACQUIRED BY MEDICAL STUDENTS BY THE END OF THE COURSE 441-MEDICINE***

**I. Professional**

**II. Medical Expert/Skilled Clinical Decision Maker**

**III. Communicator/Doctor-Patient Relationship**

**IV. Collaborator**

**V. Manager**

**VI. Health Advocate**

**VII. Scholar**

### I*.*While achieving competency in Medicine Students are expected, throughout the clerkship in internal medicine, to act in a professional manner

### a) Demonstrate compassion to his patient e.g.

1. Demonstrates sensitivity to patients’ needs and concerns

2. Takes time and effort to explain information to patients&

Comfort the sick ones.

3. Shows respect for patients’ confidentiality

**b) Demonstrate reliability and a strong sense of responsibility as he/she**:

Completes assigned tasks timely and fully and takes on appropriate share of team work

**c) Demonstrate commitment to self-improvement as he/she**:

Accepts constructive feedback, reads up on patient cases and attends rounds, seminars, and other learning events

**d) Demonstrate respect for others, as in the course of relationships with students, faculty and staff, he/she:**

Establishes rapport with team members and relates well to other health care professionals in a learning environment

**e) Demonstrates integrity by upholding a professional code of conduct as he/she:**

1. Uses appropriate language in discussion with patients and colleagues

2. Behaves honestly

3. Respects diversity of race, gender, religion, age, disability, intelligence, and socio-12. Dresses in an appropriate professional manner (context specific)

II. At the conclusion of the clerkship in internal medicine, the medical student will be a Medical Expert/ Skilled Clinical Decision Maker

1**. Demonstrate a thorough knowledge of internal medicine.** This has three dimensions:

a)      the student should know the common and life-threatening illnesses affecting adults in terms of the:

                     i.            Definition

                   ii.            Epidemiology

                  iii.            Etiology

                 iv.            Pathogenesis and pathophysiology

                   v.            Clinical features

                 vi.            Complications

                vii.            Investigations required to confirm a diagnosis

              viii.            Principles of prevention

                 ix.            Principles of management

-Medical

- Surgical

-Involvement of allied health professionals

- Nutritional

                   x.            Prognosis

A Check list of common and life threatening illness students should know through the course is included in the students log book.

b) The student should develop an approach to the diagnosis of the major presenting problems encountered in internal medicine. In order to do this, the student needs to be able to:

                     i.           List in an organized fashion the **major causes** of each of these problems

                   ii.            List the **most important or life-threatening causes** of each problem

                  iii.            Explain how data that may be obtained from the history and physical examination will affect the **likelihood of these diagnostic possibilities** for each problem

* 1. Understand the appropriate use and interpretation of diagnostic tests (see below)

### MAJOR PRESENTING PROBLEMS IN INTERNAL MEDICINE

|  |  |
| --- | --- |
| **Cardiorespiratory** Cardiac arrest / respiratory arrest Chest discomfort Cough  Cyanosis / hypoxemia / hypoxia Dyspnea  Edema Hemoptysis Hypercarbia Hypoxemia and hypoxia \*Insomnia / sleep-apnea syndrome Murmurs / extra heart sounds Palpitations (abnormal ECG, arrhythmias) Shock, hypotension Syncope, presyncope, loss of consciousness Wheezing  **Gastrointestinal / hepatobiliary** Abdominal pain Ascites Abnormal liver enzyme levels  Blood in stool (hematochezia and melena) Constipation Diarrhea  Dysphagia Hematemesis Abnormalities of liver synthetic function Jaundice Vomiting, nausea  **Renal / fluid-electrolyte** Metabolic acidosis and alkalosis Respiratory acidosis and alkalosis Hypo- and hyperkalemia Hypo- and hypernatremia Hematuria Hypertension Proteinuria Urinary frequency (associated with dysuria; associated with polyuria) Oliguria  **Endocrine** Hyperglycemia Hypo- and hypercalcemia Hypo- and hyperphosphatemia \*Hirsutism and virilization | **Hematologic/oncologic** Leukocytosis Leukopenia Anemia  Bleeding tendency/bruising Lymphadenopathy Polycythemia Splenomegaly Febrile neutropenia  **Rheumatologic** Joint pain (mono-articular and poly-articular) Painful limb Back pain  **Neurological** Coma / impaired consciousness Confusion / delirium Dementia / memory disturbances Diplopia Dizziness / vertigo Gait disturbances /Ataxia Headache Numbness and tingling Pupil abnormalities Seizures Speech and language abnormalities  Tremor Visual disturbance / loss Weakness / paralysis  **Geriatrics** Falls Failure to thrive (elderly) Urinary incontinence (elderly)  **General internal medicine** Allergic reactions Dying patient Fatigue Fever and chills Pain Poisoning Pruritus Substance abuse, drug addiction, withdrawal Weight gain / obesity Weight loss |

3. Demonstrate clinical skills:

a) Students should be able to obtain and document both a complete and a focused medical history, as the situation requires. The history will be thorough and organized, and supplemented as needed by information from other sources (family members, other health care institutions, other physicians, etc.)

b) Students should be able to perform and document both a complete and a focused physical examination, as the situation requires. In order to do this, students must be able to demonstrate:

-        An understanding of the physiologic basis of clinical findings

-        A logical, comprehensive, organized approach to the physical examination that is adaptable to specific circumstances

-        Proper techniques of physical examination

-        Appropriate attention to patient comfort, hygiene and privacy

-        An understanding of the significance of, and the ability to detect the presence of, the most important physical examination abnormalities pertinent to internal medicine.

|  |  |
| --- | --- |
| **General** Pallor Cyanosis Clubbing Icterus Cachexia  **Vital signs** Hypertension / hypotension Tachypnea / bradypnea Tachycardia / bradycardia Fever  **Head and neck** Fundoscopic changes  (hypertensive, diabetic and papilledema) Proptosis and lid lag Thyroid nodule and goitre Parotid enlargement  Meningismus  **Cardiovascular** Edema Findings of peripheral arterial insufficiency Elevated JVP / hepatojugular reflux Carotid bruit Carotid upstroke delayed Displaced apical impulse Parasternal lift / heave Abnormalities of S1  (loud, soft, variable) Abnormalities of S2 (loud P2, paradoxical split, fixed split) S3, S4 Friction rub Systolic murmurs Diastolic murmurs  **Respiratory** Tracheal deviation Findings of pleural effusion Findings of consolidation Findings of pneumothorax Wheezing Bronchial breath sounds  Dullness on  Percussio | **Abdominal** Findings of ascites Hepatomegaly Splenomegaly Tenderness Other masses  **Neurological** Cranial nerve abnormalities Weakness Tremor Spasticity and flaccidity Sensory abnormalities Hyper and hyporeflexia  Ataxia and postural instability  **Musculoskeletal** Joint tenderness Joint swelling Stress pain  Crepitus Reduced range of joint motion Joint deformity Muscle atrophy  **Skin** Local lesions Diffuse skin rash  **Lymphatic** Cervical lymphadenopathy Axillary lymphadenopathy Inguinal/femoral lymphadenopathy |

### MAJOR PHYSICAL EXAMINATION ABNORMALITIES IN INTERNAL MEDICINE

c) Students should be able to interpret commonly-employed diagnostic tests. The major tests those are pertinent to internal medicine. In order to use these effectively, students need to know their indications, contraindications, risks, and in general terms their test characteristics (sensitivity and specificity).

### MAJOR DIAGNOSTIC TESTS IN INTERNAL MEDICINE

Hematologic tests (complete blood count, blood film, coagulation studies, ESR)

Biochemical blood tests

(electrolytes, urea, creatinine, osmolarity, bilirubin, liver enzymes, ammonia, ketones, lactate, calcium, magnesium, phosphorus, albumin and total protein, glucose, uric acid, arterial blood gases, drug screen, ferritin, iron, TIBC, vitamin B12, folate, )

Endocrine blood tests

(Thyroid function tests, glycosylated hemoglobin, cortisol, aldosterone, urinary catecholamines, PTH, prolactin, vitamin D levels, cholesterol and triglyceride)

Immunologic tests

(serology including rheumatoid factor, ANA and related autoantibodies, ANCA, complement levels, serum and urine protein and immuno-electrophoresis, immunoglobulin levels)

Urine tests (urinalysis, 24 hour collection)

Microbiology tests

(gram stain and/or culture and sensitivity of blood, sputum, urine, joint fluid, CSF and other body fluids; viral serology; tests for tuberculosis and fungi;)

Stool tests (occult blood, culture, leukocytes)

Tests of other body fluids, including pleural fluid, ascites, joint fluid, bone marrow and CSF

Electrocardiography

Pulmonary function tests

Imaging tests

- Chest radiography (major emphasis)  
- Plain abdominal X-ray films and CT scan of the brain  
(recognition of life-threatening abnormalities)

(Students should also have a general understanding of the role of other imaging modalities in the differential diagnosis of presenting problems, including in particular: ultrasound of the abdomen, Doppler ultrasound of leg veins and carotid arteries, CT scan of the chest and abdomen, nuclear medicine studies of lungs and bone, plain films of bones, DEXA scanning, and MRI.

Biopsy of specific organs (e.g. liver, lymph node, kidney,)

d) Students should be able to integrate the above history, physical findings and diagnostic test results into a meaningful diagnostic formulation. This requires that the student can:

-        Generate a **problem list and** a **differential diagnosis** for each of the problems.

e) Students should be able to demonstrate therapeutic and management skills. In order to do this, the student needs to be able to:

(i)      Suggest appropriate additional investigations for each problem

(ii)  Propose a management strategy for each of the problems based on knowledge of the properties of medical therapies in terms of their indications, contraindications, and mechanisms of action, side effects, cost and monitoring.

### MAJOR MEDICAL THERAPIES

|  |  |
| --- | --- |
| **Oxygen** Nasal prongs Face mask  **Intravenous fluids** Normal saline, half-normal saline, hypertonic saline Dextrose solutions (5%, 10%, & 50%) Ringer’s Lactate  Albumin (5%, 20%)  **Nutritional therapies** Oral supplements Enteral feeding via NG- and G-tube Total parenteral nutrition (general principles only)  **Emergency drugs** Epinephrine Atropine Lidocaine Procainamide  **Cardiovascular drugs** ACE inhibitors and angiotensin receptor blockers Beta-blockers Alpha-blockers Calcium channel blockers Diuretics Digoxin Nitrates Antiarrhythmic medications -Amiodarone -Lidocaine -Propafenone -Sotalol  **Antithrombotic therapy** Antiplatelet agents - ASA - Clopidogrel - Ticlopidine Anticoagulants - Warfarin - Heparin (unfractionated and low molecular weight) | **Medications used to treat diabetes mellitus** Insulin Sulfonylurea Metformin Thiazolidinediones Meglitimides Acarbose  **\*Medications used to treat dyslipidemia** HMG-CoA reductase inhibitors Fibric acid derivatives Cholestyramine Nicotinic acid  **Medications used to treat thyroid disease** Thyroid hormone replacement  Medications for Graves’ disease (PTU, methimazole)  **Antimicrobials**  Antibiotics Penicillins Cephalosporins Macrolides Vancomycin Aminoglycosides Trimethoprim and sulphonamides Metronidazole Fluoroquinolones Tetracyclines Clindamycin  Antivirals Acyclovir Amantadine \*Antriretroviral therapy  \*Antifungals Imidazoles (fluconazole, etc.) Amphotericin  \*Medications to treat mycobacterial infections Isoniazid Rifampin Ethambutol Pyrazinamide |
| **Medications used to treat obstructive airways disease** Bronchodilators Leukotriene antagonists Corticosteroids Theophylline  **Medications used to treat acid-peptic disorders** Proton pump inhibitors H2-blockers Antacids  **Medications used to treat arthritis** DMARDs NSAIDs Corticosteroids (local and systemic) Biological agents (Infliximab, Etanercept)  **Anticonvulsants** Phenytoin Benzodiazepine Valproic acid Phenobarbital Carbamazepine Gabapentin  **Medications used to treat inflammatory bowel disease** Steroids (local, systemic) Budesonide Antibiotics Salicylate preparations Immunosuppressives  **Blood and blood products**  -Packed RBC  -FFP (fresh frozen plasma)  -Platelet | **Medications for Parkinson’s disease** L-dopa Bromocriptine Amanatidine  **Medications for Alzheimer’s disease** Aricept  **Analgesics** Opioids Acetaminophen , NSAIDs Medications for neuropathic pain Medications for bone pain  **Laxatives** Bulk laxatives Magnesium-based cathartics Lactulose PEG-based solutions Stimulant cathartics  **Anti-emetics** Dimenhydrinate Prochlorperazine Nabilone Ondansetron  **\*Medications for osteoporosis** Bisphosphonates Calcitonin SERMs (e.g. raloxifene) Estrogen  **\*Chemotherapy** General principles & emphasis on side-effects |

f) Students *are encouraged to be familiar* with the technical skills necessary to perform many of the common procedures used in internal medicine, as well as show that they understand the indications, risks and benefits of these procedures. A check list of the major procedures that medical student should be familiar with is included in the student log book.

### III. Communicator/Doctor-Patient Relationship

At the conclusion of the clerkship in internal medicine, the medical student will be able to:

1. Communicate effectively with patients and establish professional relationship characterized by understanding, trust, respect, empathy and confidentiality, taking into consideration the influence of factors such as the patient’s age, gender, ethnicity, cultural and spiritual values, socioeconomic background, and medical conditions.

### IV. Collaborator

### At the conclusion of the clerkship in internal medicine, the medical student will be able to:

a) Develop a care plan for a patient he/she has assessed, including investigation, treatment and continuing care, in collaboration with the members of the interdisciplinary team.

b) Participate in interdisciplinary team discussions, demonstrating the ability to accept, consider and respect the opinions of other team members, while contributing an appropriate level of expertise to patient care.

### V. Manager

During the clerkship in internal medicine, the medical student will deepen his/her understanding of the appropriate use of health care resources in the internal medicine context.

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### VI. Health /Advocate.

At the conclusion of the clerkship in internal medicine, the medical student will be able to:

a) Accept appropriate responsibility for the health of patients assigned to their care.

b) Recognize important determinants of health and principles of disease prevention pertinent to internal medicine.

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### VII. Scholar

At the conclusion of the clerkship in internal medicine, the medical student will be able to:

a) Demonstrate the ability to engage in self-directed learning. This involves identifying personal learning objectives, and then finding and using a variety of resources to address learning needs.

b) Assist in teaching others and facilitating learning where appropriate.

**APPENDIX - D**

**Clinical approach teaching (CAT). See Appendix D**

1. This is morning meetings for students. It will start from 7:45 to 8:45 am on Saturday, Sunday, and Monday 6 weeks during the rotation, 3 weeks in the first half and 3 weeks in the 2nd half of the 12 weeks rotation.
2. Each student will have 9 sessions during the cycle according the schedule.
3. Small group of student discuss the approach to the most common diseases with one of the consultant from each units. Three sessions will be run at the same time and students will rotate in the coming weeks according to the schedule.
4. The schedule and the suggested topics will be given to the student in the first week.

*GOOD LUCK*

Dr. Anwar Ali Jammah, MD, FRCPC, FACP.

Asst. Professor, Department of Medicine.

Consultant Endocrinology and Thyroid Oncology

MED 441 Course Organizer.

College Of Medicine, King Saud University.