Department of Internal Medicine
College of Medicine
King Khalid University Hospital
King Saud University

Course 441-Medicine Clerkship Manual

Course Director
Khalid F AlHabib.MBBS.FRCPC
Assistant Professor of Internal Medicine
Cardiology Consultant

2007/2008

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	أسبوع مدة المقرر: 12
Study year: 5th year	الخامسة سنة الدراسة:

1 = clinical teaching
2 = tutorials

Curriculum revion date: 7 / 2 / 1428 (7 / 03 / 2007)

Revised by:

Course Development committee:

Name	**Title**	**Position**
Dr. Abdulkarim Alsuwaida	Assoct. professor / consultant	Chairman
Dr. Khalid Al Habib	Assoct. professor / consultant	General Course Organizer
Dr. Ahmad Al Sagheer	consultant	Co - Organizers

Contents

Our Ultimate Mission

An ICU consultant once asked me: what is the main purpose of your rotation in the ICU?!. I replied: to learn how to deal with emergencies effectively. He said: no!!. Then I tried again: to be competent at handling intubations and formulation of a problem list effectively. He again answered: no!!. Then he volunteered to give me the answer because he noticed that I am getting frustrated: THE MAIN PURPOSE OF YOUR ICU ROTATION IS TO ***HAVE FUN****!!. The point he was trying to make is that if you are not enjoying what you are doing you are not going to excel at it (no matter what it is), and the enjoyment occurs when you feel that you are either learning or teaching something new everyday. Our ultimate mission at the Internal Medicine Department is to make sure that your learning experience is an enjoyable one in order to be a* ***competent and safe physician****.*

In order to be able to achieve that we have to remember the ***THREE main steps*** *for making any significant change happening and lasting:*

1. ***Raise your standards:***

   it is much easier to be in the "comfort zone" and to accept the "status quo". Excellence and innovation usually come from challenging the "norm" and aiming for the best. If you always aim for the second place you will never be the first. The moment we believe that we are doing "fine" we are "dead. We believe that the only way to keep growing is to believe in learning

something new everyday. BELIEVE IT OR NOT!: Following this attitude on a daily basis is one of the main reasons that made "others" ahead of us.

2. ***Change your beliefs:***

I can tell now that you are saying to yourself: " Oh great ! Nice try ! I do not believe that we can do this.. We are way behind and we need lots of things to get this going!. There is no point in raising your standards if you do not BELIEVE DEEP IN YOUR HEART that you and others can do it. And this stage of EXECUTING what you are promoting for is what make you challenge any obstacles that will face you in the future; and in fact; turning them into opportunities for further success and innovation. Remember: "Crises Create Opportunity".

3.Change your strategies:

When we apply the first two steps we will almost always reach the right new strategies. One of the best ways of accomplishing this step is to find role models who were able to achieve similar results to what we are hoping for and knowing what they did and what they didn't. That will make us more effective and we might in fact reach better results than those who were ahead of us.

*And finally, a system that does not enforce **ACCOUNTABILITY** does not deserve to be called a "system". There is no point in great speeches or making lots of promises when people who want to make the change are not held accountable to what they are suppose to do. That means that EVERYONE is held responsible: starting from medical students all the way up to consultants. So please: Do your homework before asking for your rights.*

Khalid F AlHabib.MBBS.FRCPC

441-Medicine Course Director

Tuesday, November 27, 2012

Executive Summary of Mark Distribution:

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

- **Ward Clinical assessment: 10% of the total mark**
- **Theoretical exam: 35% of the total mark**
- **Mid-Term exam (Long Case): 15% of the total mark**
- **Final OSCE exam: 40% of the total mark**

For each student, it is being considered that obtaining (24%) of the final clinical mark which is (40%) is a mandatory objective goal to pass this course.

IMPORTANT DATE TO REMEMBER:

● CLASSES:

Start On	**Saturday**		
End On	**Wednesday**		

1. FIRST ROTATION:

Start On	**Saturday**		
End On	**Wednesday**		

□ CONTINUOUS ASSESSMENT EXAM:

Start On	**Saturday**		
End On	**Wednesday**		

2. SECOND ROTATION:

Start On	**Saturday**		
End On	**Wednesday**		

□ FINAL EXAMINATION:

CLINICAL	**Start On**	**Saturday**		
	End On	**Wednesday**		
WRITTEN	**Start On**	**Saturday**		
	End On	**Wednesday**		

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 (Courses 341 and 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... The level of competency to be achieved is that which is needed in order for the student to carry on in postgraduate training in any discipline, including internal medicine, family medicine and other specialty training programs.

OBJECTIVES OF COURSE 441-MEDICINE:

During the 341-Medicine course, students are expected to achieve a *basic degree* of competence in diagnosis, and to develop *familiarity* with management, focusing on problems requiring in-patient care. In the 441-Medicine course, diagnostic skills should be further enhanced, competence in management deepened, and the range of problems and illnesses dealt with are broadened to include the ambulatory and the emergency domains. These objectives will be realized by changing the current design of the course that focuses mainly on the theoretical knowledge of the student with a passive role played in the clinical care of patients. Rather, the new changes in the course will enforce 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. .

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The course will be for twelve (12) weeks starting Saturday, 18 Safar 1427 (18 March 2006). Up to Wednesday, 11 Jumada '1 1427 (7 June 2006).

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 carry a veseable weight which will be reflected in the **CONTINUOUS ASSESSMENT MARKS.**

1. ROLE OF THE STUDENT ON THE WARD TEAM

Principle: Learning at the clerkship level is best achieved by assuming, in a progressive (or graduated) 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, and other students. The elements of being a full team member include ***the following tasks***:

1. Performing the admission history and physical examination on an appropriate number of patients (see below)
2. Attempting to develop a differential and provisional diagnosis and a plan for the presenting problems.
3. Documenting the details of the history, physical examination, impression and plan in the medical record.
4. Presenting (orally) a summary of their findings to the resident and consultant, and at other occasions such as morning report.
5. Assessing one's own patients on a regular basis with respect to the progress of their various problems.
6. Documenting in the written record 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:
    - consultants
    - residents
    - consultation services
    - family members
    - nurses
    - other allied health care professionals (physiotherapists, etc.)
8. Gathering and reviewing relevant data, including laboratory and radiological data.

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

2. THE BALANCE OF SERVICE TO EDUCATION.

Principle: The performing of a certain amount of service is an inevitable component of having meaningful responsibility. Notwithstanding, the service component should be kept to a tolerable level so as not to interfere with learning activities.

How the principle is realized: There are two competing considerations. First, many tasks that may at some level be perceived as non-educational ("scut") are in fact of considerable educational value, e.g: contacting a consulting service about coming to consult on a patient affords the student the opportunity to practice efficient, focused communication, and to learn from the consultants about their patient. On the other hand, carrying out clerical tasks such as searching for x-rays, while clearly necessary, must not be allowed to overwhelm the attention of the students.

Therefore, students, except for unusual circumstances, should not be asked to carry out service work for any patients other than those for whom they are primarily responsible.

No more than 20% of the student's time on the ward (i.e. time apart from that spent in seminars, bedside teaching sessions, etc.) should be spent in activities that clearly are not of educational value (e.g. searching for x-rays or for results of laboratory tests). The students and the rest of the team must monitor this, and if deviations are occurring, prompt corrective measures must be taken. The educationally useful aspects of tasks such as calling for a consult should be explicitly pointed out to the student.

3. NUMBERS OF ALREADY ADMITTED PATIENTS

Principle: Students need to see a certain minimum number of patients (or else their exposure is exceedingly narrow), but they must not become so busy in looking after patients that they have no time to reflect on what they are doing.

How the principle is realized:

Students should care for, *on average*, two patients at any one time, and should not look after more than five patients at any time. In some cases, with very complex patients, the student may only be able to look after as few as one or two at one time.

The students and the ward team must monitor this, and if significant deviations (higher or lower) are identified, corrective measures must be instituted.

4. INTERACTIONS WITH THE "SENIORS"

Principles:

1. The consultant is the individual best positioned to provide both "formative" feedback to students (advice about how to improve based on the student's performance so far) and a final "summative" 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.

5. TUTORIALS:

One tutorial per week on management of medical emergencies for the whole group will be given in the afternoon of every Wednesday.
(See schedule below: **Appendix B**)

6. CLINICAL SESSIONS:

- **NEUROLOGY CASE PRESENTATION** for the whole group every Tuesday, 10:00-12:00 noon in the Medical Ward 32-B Level 3 as arranged by Neurology Division.
  - Each session will have one long case and one or two short case. These numbers are chosen by the teacher depending on discussion potential.
  - The 32 – B Nurses at the station of Neurology Ward should be informed or notified about the case to be about the case to be used for the long case presentation. Notice should be given a day before the presentation and it should note be later than 12:00 noon.
  - The assigned student will prepare the patient during the day present to the teacher (who will do the final clinical examination), the case with a complete history and physical examination, Provisional diagnosis, differential diagnosis and plan for the investigation and management. The rest of the class listens to the student as he / she presents his / her case. Presenter of the case may then be asked by the teacher of other things related to the case presented. Discussion is open then to the whole class and exchanging of questions is allowed. The student could be asked to demonstrate abnormal physical findings and interprets ECG, X-RAY or scans of the said patient. Between 60 minutes should be given for these long case discussions.
  - 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.
  - These sessions have been arranged specifically to increase exposure to the patient suffering from the conditions seen mainly in the sub-specialized division.

7. INTERNAL MEDICINE MORNING ROUND:

Lecture Theatre C. Level 3. 07:45-08:30AM.

3. Assessment Exams

- Theory Exam
  This is a clinically-oriented theoretical assessment that involves Single-Best and True/False MCQ's through patient case scenarios.

- Clinical Exam
  - It consists of one long case for the mid-term exam and OSCE at the end of the course.

• LONG CASE

The mid-term clinical exam will consist of one long case instead of 2 short cases. The goal here is to introduce the medical student to the clinical exam format mid-way in his/her training period so mistakes could be learned from and avoided in the future exams. Each student has the right to repeat the exam if a clear evidence was submitted indicating an unfair exam (e.g. non-compliant patient). A one-page "long-case feedback" form will be filled immediately by the examiners that will be copied and then given to the student in order to improve his/her performance for the next exam.

An example of how this form looks like is shown in **Appendix C.**

• 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 **10 stations**, and each station lasts for **6 minutes,** so the total time for **1 OSCE is 60 minutes.**
- The stations are divided into the following:
  - **4 Data Interpretation Stations**
  - **3 Focused Clinical Stations.**
  - **3 Rest Stations.**

- 10 students will undertake the OSCE at one time, followed by a 10-minute break, then another 10 students will undertake the OSCE.

- Each student will be provided with 8 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.

- There will be 2 OSCE's IN ONE WARD and another 2 OSCE's IN ANOTHER WARD in the morning for **2 consecutive days** in order to examine 80 students.

- One ward will be supervised by the Course Director and 2 registrars and the other ward will be supervised by the Course co-director and another 2 registrars.

- Since there are 7 stations, and each station requires **1 consultant** as an examiner, **the total number of consultants needed is 7 per 1 OSCE exam.** The patients and the examiners will be the same for each of the 2 consecutive OSCE's. Thus, the total number of consultants needed per the 4 OSCE's that will be held in one day is **14**. Senior registrars *could be used* as a back up in case of insufficient number of available consultants.

- One station (out of the total number of 3) in the Focused Clinical stations might be used as a simulated patient for history taking. According to this, the long case exam will be shifted to the continuous assessment mid-term period to facilitate the organization process of the OSCE in the finals. The long case will be done by each unit subdivision to its particular group of students.

- *EACH SUBSPECIALTY UNIT IS RESPONSIBLE FOR:*
  - PROVIDING THE FORMATS FOR THE STATIONS RELATED TO THEIR SUBSPECIALTY.
  - PROVIDING THE IDEAL ANSWERS AND MARKS ASSIGNED TO EACH QUESTION.

- **I. 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)

  - **Rheumatology:**
    - knee aspirate (e,g: septic versus inflammatory)

  - **Hematology/Oncology:**
    - CBC: (e.g: microcytic hypochromic anemia, PRV…etc)

- **GI:**
  - Abnormal liver enzymes (e.g.: acute hepatitis..etc)
  - Ascitic fluid aspirate (e.g.: exudate..etc)

- **Nephrology:**
  - Abnormal BUN & creatinine (e.g.: acute renal failure,…etc)
  - Electrolyte disturbance (e.g.: hyponatremia..etc)
  - Acid-base imbalance (e.g.: high-AG 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

3. **Mention 3 initial and essential laboratory investigations? (3 marks)**

   ✓ Ideal answer
   a. Sputum for C/S
   b. Sputum for AFB
   c. CBC

4. **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)

2. 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)

II. 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 6 minutes period allotted to that station.

- Here are some examples of possible stations in each subspecialty:

  - **CVS:**
    - Precodium: murmurs, mechanical valve sounds
    - Peripheral Pulses
    - JVP
    - B.P measurement

- **Respiratory:**
  - Chest (Percussion & Auscultation)

- **Endocrine:**
  - Thyroid

- **Rheumatology:**
  - Hip
  - Knee
  - Hands
  - Shoulder

- **Hematology/Oncology:**
  - Spleen
  - Lymph nodes

- **GI:**
  - Liver
  - Ascitis

- **Nephrology:**
  - Kidney

- **Neurology:**
  - Specific Cranial Nerve (e.g.: 7^{th} cranial nerve,..etc)
  - Specific Motor deficit
  - Specific Sensory deficit
  - Cerebellar exam

FOCUSED CLINICAL EXAM ASSESSMENT FORMAT

***JVP* Station**

Student Name: _____

Student No.: _____

I- Technique (60%): The medical student is able to properly do the following:-

	YES	NO	
1. Identify the different anatomical landmarks for the JVP and the carotid pulse in the neck	_____	_____	1 mark
2. Able to measure the exact height of the JVP	_____	_____	2 marks
3. Able to demonstrate the different clinical maneuvers used to distinguish JVP from the carotid pulse	_____	_____	3 marks

II- Interpretation (40%):

The medical student is able to properly:

- Identify whether the JVP is low, normal or high 2 marks
- Mention 2 differential diagnoses for ……... 2 marks

EXAMINER NAME: _____ EXAMINER NAME: _____

SIGNATURE: _____ SIGNATURE: _____

FOCUSED CLINICAL EXAM ASSESSMENT FORMAT

***SPLEEN* Station**

Student Name: _____

Student No.: _____

I- Technique (60%): The medical student is able to properly do the following:-

		YES	NO	
1.	Palpation: from the right iliac fossa toward the left costal margin	_____	_____	2 marks
2.	Percussion: able to demonstrate the percussion note over the abdomen & left lower ribs	_____	_____	2 marks
3.	Demonstrate the different clinical maneuvers used to distinguish spleen from the kidney (Palpation after rolling over the patient toward him/her, bimanual technique for the kidneys)	_____	_____	2 marks

II- Interpretation (40%):

The medical student is able to properly:

- Identify whether the spleen is normal or enlarged 2 marks
- Mention 2 differential diagnoses for …… 2 marks

EXAMINER NAME: _____ EXAMINER NAME: _____

SIGNATURE: _____ SIGNATURE: _____

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.

10.2		140	25	10.4
13.4	223	4.0	100	120

- ***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)

2. **New CHF:**

   P: D/C IVF. I/V lasix 40mg then R/A. Start Lisinopril 10 mg OD. CXR. Echocardiography to check LV function.

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

P: Start Gliclazide (will check the dose). Consult endocrine service. Gluco-check QID. Check for microalbuminurea.

4. **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.

5. **Hypercholestrolemia:**

P: start Lipitor 40mg OD.

Dr.M.ALQahtani
Subintern
Pager: 2300

APPENDIX - B

TUTORIAL ON EMERGENCY MEDICINE

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

DATE	TIME	TOPIC	TUTOR
	1:00 – 1:30	Liver Function Test	Prof. Saleh Al Amri
	1:30 – 3:30	Arterial Blood Gases (ABG) + Sodium Imbalance	Dr. Nauman Tarif
	1:00 – 3:30	E.C.G. - 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. Hatem Mubarak
	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	Occupational Hazard	Dr. Saleh Al Ballaa
	2:30 – 3:30	Potassium Imbalance	Dr. Nawaz Ali Memon
	1:00 – 2:30	Acute Obstructive Airway Disease	Dr. Abdulaziz Al Zeer
	2:30 – 3:30	Hypertensive Crisis	Dr. Mohamad Arafah
	1:00 – 3:30	Endocrine Emergencies a) Diabetic Ketoacidosis b) Thyroid Emergencies c) 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 Renal Failure	Prof. Jamal Al Wakeel
	1:00 – 3:30	Ischemic Heart Disease ECG General	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

441- MED. LONG CASE STUDENT FEEDBACK FORM

(Please encircle 1 or more)

STUDENT NAME: _____

STUDENT NO.: _____

Major Strengths:

1. Confident
2. Organized
3. Proper attitude and bedside manners
4. Competent history: *comprehensive, accurate, and concise*
5. Competent physical examination: *complete and accurate*
6. Competent differential diagnosis & management: *analyses, synthesizes, and integrates all relevant data into a rational, logical management strategy.*

Major Weaknesses:

1. Hesitant
2. Disorganized
3. Improper attitude and bedside manners
4. Incompetent history
5. Incompetent physical examination
6. Incompetent differential diagnosis& management

Further comments/advices for further improvements:

1. _____
2. _____
3. _____

EXAMINER NAME _____ EXAMINER NAME _____

APPENDIX - D

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

1. **Medical Expert/Skilled Clinical Decision Maker**
2. **Communicator/Doctor-Patient Relationship**
3. **Collaborator**
4. **Manager**
5. **Health Advocate**
6. **Scholar**
7. **Professional**

1. Medical Expert/ Skilled Clinical Decision Maker

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

1. Demonstrate a knowledge of the scientific and humanistic foundations of medicine, in order to more rationally diagnose and manage the various factors contributing to a patient's illness.

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

a) Relevant aspects of common and life-threatening illnesses affecting adults in terms of the:

i. Definition
ii. Epidemiology
iii. Etiology
- biological
- psychological
- social
- economic, legal, ethical and cultural

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

COMMON AND/OR LIFE-THREATENING MEDICAL ILLNESSES

Cardiac
Coronary artery disease
Congestive heart failure
Arrhythmias
Hypertension
Valvular heart disease
Pericarditis

Respiratory
COPD
Pneumonia, including tuberculosis
Asthma
Thromboembolic disease
Pleural effusion
SARS

Gastrointestinal / hepatobiliary
Gastroesophageal reflux disease
Peptic ulcer disease
Inflammatory bowel disease
Hepatitis
Cirrhosis
Biliary tract stones and obstruction
Pancreatitis
Gastrointestinal hemorrhage
*Irritable bowel syndrome
*Malabsorption

Renal / fluid-electrolyte
Acute renal failure
Chronic renal failure
Glomerulonephritis
Diabetic nephropathy
Obstructive uropathy

Neurological
Seizure disorders
Stroke
Dementia
Delirium
Movement disorders

Hematologic/oncologic
Iron deficiency
Megaloblastic anemias
*Hematologic malignancies
- Multiple myeloma
- Leukemia (acute and chronic, lymphocytic and myelogenous)
Bleeding disorders
- Platelet abnormalities
- Coagulation abnormalities

Hypercoagulable states

Endocrine
Diabetes mellitus
Hypo- and hyperthyroidism
Thyroid nodule
*Dyslipidemia
*Osteoporosis
Adrenal insufficiency
*Endocrine hypertension
*Endocrine neoplastic disorders
*Cushing syndrome

Rheumatologic
Rheumatoid arthritis
Osteoarthritis
Crystal-induced arthritis
Systemic lupus erythematosus
Vasculitis
Scleroderma
Polymyositis
Seronegative disorders (spondyloarthropathies)

Infectious disease
HIV infection
Urinary tract infection

Oncology
*Breast cancer
*Colon cancer
*Lung cancer

b) 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

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

c) The properties of medical therapies, in terms of their indications, contraindications, mechanisms of action, side effects and monitoring.

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

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)

Urinary frequency (associated with dysuria; associated with polyuria)
Oliguria

Endocrine
Hyperglycemia
Hypo- and hypercalcemia
Hypo- and hyperphosphatemia
*Hirsutism and virilization

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.

MAJOR PHYSICAL EXAMINATION ABNORMALITIES IN 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

Abdominal
Findings of ascites
Hepatomegaly
Splenomegaly
Tenderness
Other masses

Neurological
Cranial nerve abnormalities
Weakness
Tremor
Spasticity and flaccidity
Sensory abnormalities
Hyper and hyporeflexia

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
Percussion dullness

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

c) Students should be able to interpret commonly-employed diagnostic tests. The major tests that 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 (general principles only))

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

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**
- Generate a **differential diagnosis** for each of the problems, and suggest a **tentative or provisional diagnosis**

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 a knowledge of efficacy, risk and cost. By the end of the course, **students should be able to write admitting orders for each of the common problems encountered in internal medicine**, and their orders should be co-signed by the their seniors in the team.

MAJOR MEDICAL THERAPIES

Oxygen
Nasal prongs
Face mask

Intravenous fluids
Normal saline, half-normal saline, hypertonic saline
Dextrose solutions (5%, 10%, & 3.3% with 0.3% NaCl)
Ringer's Lactate

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

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 of use of chemotherapeutic agents, with 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. Many of these procedures have the following properties in common: the need for cleaning of the skin, anesthesia, insertion of needles and obtaining of specimens, and attention to infection control.

MAJOR PROCEDURES IN INTERNAL MEDICINE

Principles and practice of infection control measures

Venipuncture

IV cannulation

Arterial puncture for arterial blood gas sampling

ECG recording

Urinalysis

Urinary catheterization

Nasogastric tube insertion

Tuberculin skin testing

Interpretation of blood films

Lumbar puncture

Thoracentesis

Paracentesis

Bone marrow aspiration and biopsy

Subcutaneous and intramuscular injection

4. Make use of evidence-based medicine (EBM) so that they can better diagnose and manage patient problems.

MAJOR CONCEPTS OF EVIDENCE-BASED MEDICINE

Pertaining to diagnosis
Sensitivity
Specificity
Positive predictive value
Negative predictive value
Likelihood ratios

Pertaining to therapy
Relative risk reduction
Absolute risk reduction
Number needed to treat
Number needed to harm
Generalizability

2. Communicator/Doctor-Patient Relationship

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

a. Communicate effectively with patients, their families and the community through verbal, written and other non-verbal means of communication.

b. Establish professional relationships with patients, their families (when appropriate) and community that are characterized by understanding, trust, respect, empathy and confidentiality.

c. Deliver information to the patient and family (as appropriate) in a humane manner, and in such a way that it is easily understood, encourages discussion and promotes the patient's participation in decision-making.

d. Gather information, negotiate a common agenda, and develop and interpret a treatment plan, while considering the influence of factors such as the patient's age, gender, ethnicity, cultural and spiritual values, socioeconomic background, medical conditions, and communication challenges.

e. Present a case summary orally in a clear, logical and focused manner, including:

- **pertinent positive and negative findings from the history, physical examination and investigations**
- **a problem-oriented summary and a differential diagnosis**
- **a plan for further investigation and management**

f. Document in writing, all aspects (including the results of the history, physical examination and diagnostic tests, the problem list and differential diagnoses, and management plan) of the patient encounter in the patient chart. This should be done in a clear, organized and legible manner to a standard demanded by the fact that this is a legal document. In hospitalized patients, this includes:

- The admission and discharge notes.
- Daily progress notes that consist of a problem list, relevant changes in symptoms and physical findings, results of investigations, plans for future work-up, therapeutic interventions administered, and response to therapy.
- Admission and subsequent orders that are unambiguous and legible.

3. Collaborator

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

a) Describe the roles and expertise of all members of the interdisciplinary team that are involved in the care of patients with an internal medicine problem.

b) 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.

c) 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.

4. 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.

5. Health Advocate/Community Resources

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.

c) Act as an advocate on behalf of patients assigned to their care, when interacting with other members of the health care team.

6. 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, and to use self-reflection to assist their own learning.

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

7. Professional

Throughout the clerkship in internal medicine, the medical student will:

a) Behave in an altruistic manner, as he/she:

1. Demonstrates sensitivity to patients' needs
2. Takes time and effort to explain information to patients
3. Takes time and effort to comfort the sick patient
4. Listens sympathetically to patients' concerns
5. Puts patients' interests before his/her own
6. Shows respect for patients' confidentiality

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

7. Completes assigned tasks timely and fully
8. Fulfills obligations undertaken
9. Takes on appropriate share of team work

10. Fulfills call duties

11. Reports accurately and fully on patient care activities

12. Always ensures transfer of responsibility for patient care

13. Informs supervisor/team when mistakes occur

14. Informs supervisor/team when faced with a conflict of interest

c) Demonstrate a commitment to excellence via self-improvement and adaptability as he/she:

15. Accepts constructive feedback

16. Recognizes own limitations and seeks appropriate help

17. Incorporates feedback to make changes in behavior

18 .Adapts well to changing circumstances

19. Reads up on patient cases

20 .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:

21. Establishes rapport with team members

22. Maintains appropriate boundaries in work and learning situations

23. Relates well to fellow students in a learning environment

24. Relates well to faculty in a learning environment

25. Relates well to other health care professionals in a learning environment

e) Demonstrates honour and integrity by upholding student and professional code of conduct as he/she:

26. Refers to self accurately with respect to qualifications

27. Uses appropriate language in discussion with patients and colleagues

28. Resolves conflicts in a manner that respects the dignity of those involved

29. Behaves honestly

30. Respects diversity of race, gender, religion, age, disability, intelligence, and socio-economic status

31. Maintains appropriate boundaries with patients

32. Dresses in an appropriate professional manner (context specific)

Here is a specific example of the end-product would be like when the 441-Medical Student is able to achieve and integrate most of the skills required above:

CARDIOLOGY:

- Ischemic Heart Disease:
  - Competent at distinguishing angina from other causes of chest pain.
  - Competent knowledge of different acute coronary syndrome presentations (Unstable Angina, NSTEMI, STEMI), their pathophysiology, and how they might be treated differently and why.

- Congestive Heart Failure:
  - Competent knowledge of the pathophysiology and precipitating cause of heart failure.
  - Competent knowledge of the different classes of the drugs used in the treatment, particularly to distinguish those that improve survival versus morbidity alone and why.
  - Competent at recognizing and eliciting signs of congestion, e.g: chest crackles, high JVP, ascites, and lower limb edema.

- Arrhythmias:
  - Competent knowledge of the main types of arrhythmias, such as: atrial fibrillation, atrial flutter, ventricular tachycardia, ventricular fibrillation, and types of heart block.
  - Competent general approach to the management of the above problems, e.g: atrial fibrillation: 1) rate control, 2) rhythm control, 3) anticoagulation, 4) secondary causes, and be familiar with different classes of drugs used.

- Hypertension:
  - Competent knowledge of the classification of HTN
  - Competent general approach to the management of the HTN, e.g: 1) Precipitating factors, 2) Classes used in the treatment, their common side effects, and why certain drug classes are preferred in some patient populations (ACE-I or ARB's in diabetics), 3) Target BP in certain populations (< 130/80 mmgH in diabetics).
  - Competent at the technique of B.P measurement.

- Valvular Heart Disease:
  - Competent knowledge of the clinical presentations and management of the most common valvular heart diseases, e.g: aortic stenosis, mitral regurgitation, and mitral stenosis.
  - Competent knowledge of the most common etiologies of the above, e.g: degenerative valve disease with aging in aortic stenosis, rheumatic heart disease in mitral stenosis.
  - Competent clinical assessment of the description, e.g: ejection systolic versus pansystolic murmur, and severity of the most common valvular pathologies on physical exam, e.g: able to distinguish severe aortic stenosis from aortic sclerosis,