1

**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 asystematic 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 recognise patients with **life threatening conditions** &have asafe and organized

approach to the diagnosis and management of common medical emergencies.

5)Be able to **communicate effectively** ,both orally and in writing with patientsand other

health care professionals

6)Be able to pracise **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.

2

**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 will be reflected in the **CLINICAL ASSESSMENT MARKS.**

**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**.

3

**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**)

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**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 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 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.

**6. INTERNAL MEDICINE MORNING ROUND:**

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

**7. BED SIDE 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 andMoxham, latest edition

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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. A guide to physical examination and history taking by Barbara Bates,

latest edition.

2. Macleod’s Clinical Examination by John Munro and C. Edwards

3. Clinical Examination - 2nd Edition by Nicolas Talley and Simon

O’Connor

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**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: 20% of the total mark**

**a) 5% attendance. b) 10% unit evaluation. c) 5% log book.**

**2) Theoretical exam: 40% of the total mark**

**3) Final OSCE exam: 40% of the total mark**

For each student, it is mandatory to obtain (24% out of 40%) 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.

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**IMPORTANT DATE TO REMEMBER:**

**● CLASSES:**

**Start On Saturday 15/04/1430 11/04/2009**

**End On Wednesday 24/06/1430 17/06/2009**

**1. FIRST ROTATION:**

**Start On Saturday 15/04/1430 11/04/2009**

**End On Wednesday 18/05/1430 13/05/2009**

**□ CONTINUOUS ASSESSMENT EXAM:**

**Start On Saturday 21/05/1430 16/05/2009**

**End On Wednesday 25/05/1430 20/05/2009**

**2. SECOND ROTATION:**

**Start On Saturday 21/05/1430 16/05/2009**

**End On Wednesday 24/06/1430 17/06/2009**

**□ FINAL EXAMINATION:**

**Start On Saturday 20/06/1430 13/06/2009**

**End On Wednesday 24/06/1430 17/06/2009**

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3. **Assessment Exams**

- Theory Exam

This is a clinically-oriented theoretical assessment that involves Single-Best

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. 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 **7 minutes,** so the total

time for **1 OSCE is 70 minutes.**

- The stations are divided into the following:

**a - Data Interpretation Stations**

**b- Focused Clinical Stations.**

**c -Rest Stations.**

• 10-11 students will undertake the OSCE at one time, followed by a 10-minute break,

then another 10-11 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.

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• **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: 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)

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**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

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**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

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

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***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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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***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 \_\_\_\_\_\_ \_\_\_\_\_ 2 marks

toward the left costal margin

2. Percussion: able to demonstrate the percussion \_\_\_\_\_\_ \_\_\_\_\_ 2 marks

note over the abdomen & left lower ribs

3. Demonstrate the different clinical maneuvers

used to distinguish spleen from the kidney \_\_\_\_\_\_ \_\_\_\_\_ 2 marks

(Palpation after rolling over the patient toward

him/her, bimanual technique for the kidneys)

**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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**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**

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**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) + 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.

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

2:30 – 3:30 Electrolytes Imbalance Dr.

1:00 – 2:30 Acute Obstructive Airway Disease Dr. Abdulaziz Al Zeer

2:30 – 3:30 Hypertensive Crisis Dr.

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 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

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**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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**APPENDIX - D**

***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

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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

iv. 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

**Hematologic/oncologic**

Leukocytosis

Leukopenia

Anemia

Bleeding tendency/bruising

Lymphadenopathy

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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

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

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- 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

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

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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,)

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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**

**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

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Antiplatelet agents

- ASA

- Clopidogrel

- Ticlopidine

Anticoagulants

- Warfarin

- Heparin (unfractionated and low molecular

weight)

\*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

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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:

a. 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.

**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.

**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.