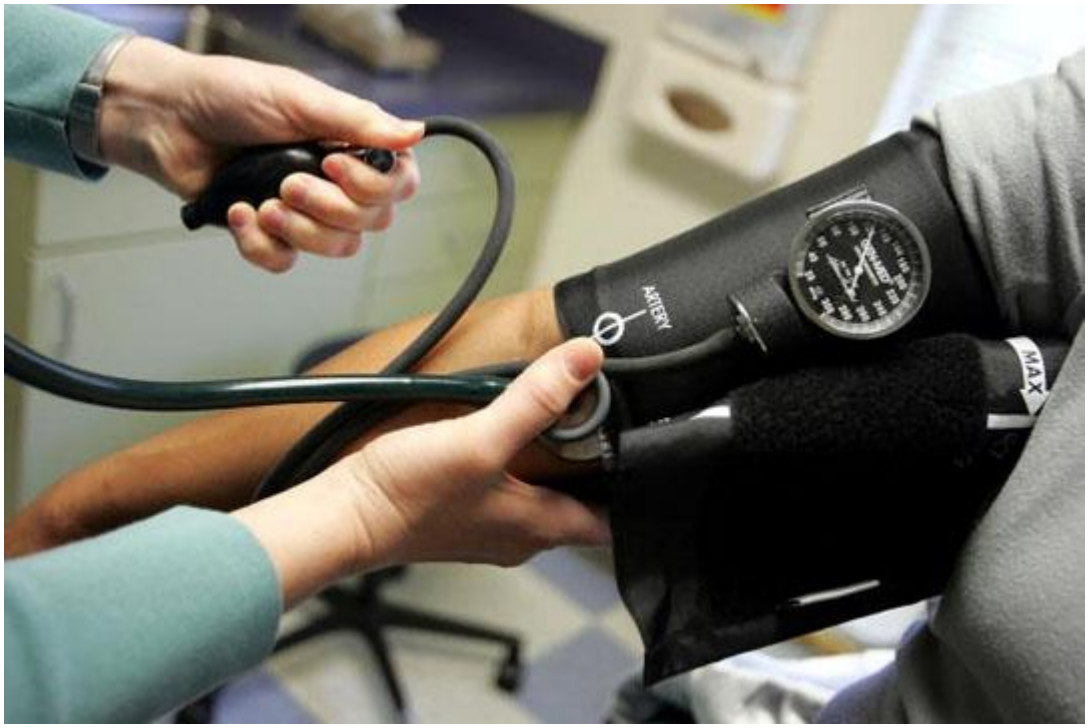
College of Medicine
Department of Medical Education



YEAR FIVE STUDENT'S GUIDE

(Academic Year 1435/1436)

King Saud University
College of Medicine
Department of Medical Education

YEAR 5 STUDENT'S GUIDE

1435-1436

Copyright Statement

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WELCOME ADDRESS

Dear Students,

We are pleased of your progress to year 5. We hope you will find this year engaging and enriching your knowledge, skills, competencies and professional attitude.

Department of Medical Education

Message from the Dean

I am pleased as your new Dean to welcome you all to the final year in the medical program. We are pleased with your progress and your achievements. Being a fifth year medical student is a great opportunity for you to prepare yourself to join the medical workforce and become a practicing doctor. You have definitely by this stage mastered the needed biomedical sciences, and acquired knowledge, clinical skills and professional attitude needed to join the clinical practice after completing this year and a 12-month training in the hospital called "internship".

The curriculum in the fifth year builds on the educational philosophy and the approaches you have experienced in the first four years and introduces you to a number of skills in the clinical environment in three main areas: Internal Medicine, General Surgery and Paediatrics. The Department of Medical Education through its different units has been working hard to create an integrated and innovative curriculum that builds on the changes introduced in the preclinical years and enforces best teaching/learning approaches in the design of the new medical curriculum.

The curriculum in the clinical years aims at enhancing your skills in areas such as clinical examination, communication skills, professionalism, and preparing you for a life-long learning experience. The design of the curriculum encourages small group learning, use of cases for small group discussion, lectures, student-led seminars, bed-side teaching, use of multimedia and e–learning as modes for teaching and learning as well as task-based learning through practicing the art of taking medical history, and conducting examination of patients. The use of wide range of teaching and learning modes and small group discussion will enable you to become an active learner, and work with other students in your group as a team member.

I wish you all the best during your academic year and would encourage all of you to get the best out of the teaching and learning opportunities provided to you during this year. Our teaching staff and clinicians would be very happy to help you on any issue that you need help with.

Professor Fahad Abdullah Al Zamil

Dean, College of Medicine and Supervisor King Saud University Hospitals

Message from the Vice Dean (Academic Affairs)

It is a great pleasure to welcome you all to the final year in our medical course. I would like to take this opportunity to congratulate everyone for your success and achievements. There is no doubt that you have worked hard during the last four years to adapt to the university and hospital environment. In the meantime, we would like you to remember that success is not a destination, success is a journey and there will be many challenges during your journey of success. A successful person would turn these challenges into opportunities for success.

As you might be aware, our faculty under the leadership of our Dean is moving into an integrated curriculum that encourages small group learning and student-centered approaches for learning. To achieve these goals we have established the Department of Medical Education under the leadership of Dr. Sami Al-Nassar and his teams to develop the new integrated curriculum. The design of the new curriculum is focused on the students not the teachers. Our aim is to equip each of you with the current teaching and learning strategies that are used in the best universities worldwide and ensure that you will be an excellent medical doctor who will be committed to the profession and willing to serve patients in our country, our region, and wherever our government and our professional bodies would ask you for help.

On these bases, our aim is not just to graduate more doctors; our aim is to ensure that doctors graduating from our university are equipped with knowledge, skills, behaviour, and competencies needed for best practice of medicine anywhere in the world. This goal makes a lot of responsibility from your end and we would like you to take this opportunity and work effectively to achieve your goals. Our academic and clinical staffs are expert in their areas and very eager to help and support you to achieve your dreams. I would encourage you to ask for help when needed and our support team would work with you on any challenges you might face during the course. I wish you all the best.

Dr. Faisal Al Saif
Vice Dean for Academic Affairs
College of Medicine

Introduction

The fifth year in the medical program adds to your learning and clinical skills in medicine. The subjects taught will enable you to master a number of skills and competencies in particular:

- Enhancing your learning skills in the clinical environment.
- Building your capacity as being part of a clinical team and demonstrating professional attitude in day-to-day learning activities in the clinical environment.
- Generating hypotheses to patient's problems.
- Enhancing skills in taking a detailed medical history from patients as well as interpreting the findings identified in the history.
- Linking knowledge learnt from basic sciences with clinical applications and clinical practices.
- Interpreting clinical signs and using clinical findings in refining hypotheses (differential diagnosis).
- Mastering the use of clinical investigations in refining hypotheses and the ability to interpret investigation results.
- Constructing a management plan showing, management goals, management options and factors that could interfere with management options.
- Mastering interpersonal skills and effective communication skills with patients and their relatives as well as with peers, consultants, supervisor, and other allied health members.
- Mastering clinical examination skills and demonstrating bed-side manners and clinical competencies required at under graduate level.
- Mastering professional attitude including accountability, commitment, confidentiality, and a devotion to the profession and community service.
- Linking theory with clinical practices and understanding the disease aetiology, contributing factors, prevention, epidemiology, pathology, pathogenesis, complications, and prognosis.

On these bases, the curriculum in the clinical years (years 5) has been developed using the following educational principles:

- Principle # 1: Focus on knowledge, competencies, skills, and professional attitude. The curriculum in the clinical years allows students to develop specified outcomes in relation to knowledge, competencies, skills, and professional attitude. The use of a wide range of teaching modes such as bed-side teaching, outpatient clinic, student-led seminars, small group discussion, lectures, standardized patient, simulation, self-directed learning, case presentations, and virtual patient should be encouraged. A number of competences should be developed in the clinical years. These competencies can be summarized as follows:
  - (i) Competencies in clinical skills (e.g., taking medical history, conducting a clinical examination, generating hypotheses, making priorities, providing justification, making a differential diagnosis, ordering investigations, etc).
  - (ii) Competencies in practical procedures (e.g., conducting basic life support, taking arterial blood gas samples, taking throat swabs, conducting opthalmoscopic examination, conducting a pelvic examination and taking a pap smear, etc).
  - (iii) Competencies to investigate patients and interpret the results of these investigations (e.g., X-rays, CT and MRI scans, ultrasounds, biochemical tests, full blood count and blood film, hormonal assays, microbiological test results and cultures, immunoassays, etc).
  - (iv) Competencies in patient management (e.g., identifying management goals, management options, and factors that could interfere with the management options).
  - (v) Competences in health promotion and disease prevention.
  - (vi) Competencies in dealing with uncertainty, solving problems, and making decisions on the bases of available evidence.
  - (vii) Competencies in communication skills and demonstrating professional attitude (e.g., communicating with respect, explaining issues to patients, showing empathy, and demonstrating accountability, flexibility, confidentiality, and commitment to the profession).

(viii) Competencies in admission of patients (e.g., completing forms, reporting infectious diseases, providing data, using hospital electronic systems).

- Principle # 2: Encourage students to understand the scientific basis for clinical skills. This may include:

  (i) Understanding the mechanisms and pathogenesis of different diseases.

  (ii) Understanding the different stages of a disease/condition and available management/prevention options available for each stage.

  (iii) Understanding the value of pathology, clinical biochemistry, anatomy, radiology, microbiology, and physiology in the interpretation of investigation results and laboratory tests.

  (iv) Understand the scientific basis of clinical signs. This may deepen student's understanding of these signs and their significance.

  (v) Understand the rationale for ordering a particular investigation and what type of changes are expected.

  (vi) Understand the scientific basis for disease complications.

  (vii) Understand the scientific basis by which drugs work and discuss the therapeutic basis.

- Principle # 3: The curriculum at this stage aims at preparing students for safe practices.

  There are common sources of errors that have been identified in the literature and learning from error pathway should be clearly included in the curriculum.

  Examples of these are:

  - Human factors in errors (60% of errors).
  - Organisation / system design (30%).
  - Team factors, lack of cooperation, lack of communication.
  - Task uncertainty.
  - Absence of self-reporting because of blame.

Addressing these factors with key examples from these clinical subjects is essential in the construction of a good medical curriculum.

- Principle # 4: The focus is on common cases that students need to know at undergraduate level and key learning principles.
  (i) Generate hypothesis.
  (ii) Collect data through medical history.
  (iii) Interpret findings from history and use history in refining their hypotheses.
  (iv) Conduct clinical examination, interpret clinical findings.
  (v) Weigh evidence for and against each hypothesis.
  (vi) Generate a differential diagnosis.
  (vii) Use investigations to confirm their final diagnosis.
  (viii) Interpret investigation results
  (ix) Generate a management plan.
  (x) Discuss management options.
  (xi) Present their findings to their peers and ask for feedback from their peers and teachers.
- Principle # 5: The formative assessment aims at preparing students to the summative assessment and future clinical practices.
- Principle # 6: The clinical years, particularly year 5, aim at preparing students to join the medical workforce:
  - Be able to detect emergency situation that need consultant attention.
  - Ask for help when needed.
  - Behave in a professional manner and demonstrate commitment, and respect to patients, colleagues, consultants, and other members in the team.
  - Work as part of a team.
  - Build on their clinical learning and develop further their skills.
  - Communicate effectively with patients, colleagues, consultants and their teams.

Educational Objectives of Year 5

Detailed objectives of each subject taught in year 4 are given in the second part of this guide. Below the overall educational objectives of the medical curriculum in year 4:

Knowledge:

- Understanding the basic principles for internal medicine, general surgery and paediatrics.
- Understanding the role of environmental factors, genetics, and bio-psychosocial factors in the development of diseases affecting different body organs and/or psychiatric disorders.
- Discuss the aetiology, epidemiology, pathogenesis, presenting symptoms, clinical signs, differential diagnosis, and investigations needed for common diseases affecting the community and commonly seen by a family physician.
- Understanding the mechanisms by which diseases affect the body at body system, body organ, cellular and molecular levels and clinical findings of common diseases affecting these organs, as well as the use of investigations to confirm the final diagnosis and develop a management plan.
- Understanding the basic and clinical sciences for anesthesia and related clinical applications at undergraduate level.
- Understanding the basic and clinical sciences of internal medicine, general surgery and paediatrics at the undergraduate level.

Cognitive skills:

- Interpreting patient's symptoms, clinical findings and investigation results and using the information in refining their hypotheses.
- Fostering critical analysis skills including researching the literature, looking for supportive evidence, collecting and analyzing data, and making decisions on the basis of available evidence.
- Understanding the scientific approaches and the use of deductive theory in their clinical approaches including: generating hypotheses, creating an enquiry plan, looking for evidence,

interpreting clinical findings, interpreting investigation results, using the new information in refining hypotheses, handing uncertainty, building mechanisms, and designing a management plan.

- Using critical analysis strategies in researching the literature and assessing evidence.

Communication and interpersonal skills:

- Building on skills learnt from professionalism, personal development skills and medical ethics in communicating effectively with patients, relatives, peers, consultants, clinical teachers, and other members in the clinical team.
- Enabling students to foster their communication skills and interpersonal skills in their day-to-day learning activities such as bed-side teaching, task-based learning, and out-patient clinic.

Accountability/Responsibility:

- Demonstrating the ability to complete tasks given by supervisors on time such as case presentations, researching an issue and reporting back to the group, or working with a team on a task.
- Demonstrating the ability to become accountable/responsible for their actions in regard to attendance, contribution to discussion, working effectively with peers, and getting the best out of each teaching/learning activities.

Information technology:

- Using self-directed learning skills and application of knowledge learnt in addressing interactive tasks in e-cases (e.g., those covering internal medicine, general surgery and paediatrics) .
- Using information technology as a means for communication with peers, and teacher, as well as in facilitating learning by using multimedia, on-line educational resources, e-books, and e-journals.

Psychomotor skills:

- Conducting interviews with patients in a professional way and interpreting patient's symptoms.
- Developing skills in clinical examination such as inspection, palpation, percussion, and auscultation.
- Conducting a physical examination of different body systems and eliciting clinical signs, as well as using such information to refine their hypotheses.
- Developing skills in basic clinical procedures and clinical skills by using mannequin-based simulation modalities and high- fidelity standardized patients. The aim is to ensure competency in such skills and ensure patient safety in such training.
- Making priorities in managing emergency situations, critically ill patients, and patients with trauma.
- Ensuring safe practice and realizing cases/situations that need urgent care of a consultant.

Subjects taught in Year 5:

The subjects taught in year 5 are:

- General Surgery (SURG 453)
- Internal Medicine (MED 441)
- Paediatrics (PEDIA 474)

Teaching and Learning Modes:

In an integrated curriculum like our curriculum, we use a wide range of teaching and learning strategies to ensure that learning meets the different needs of the students. These teaching/learning modes include:

- Small group discussion
- Interactive lectures
- Bed-side learning.
- Clinical skills lab.
- Self-directed learning
- E-learning.
- Simulation.
- Standardized patients.
- Out-patient clinic
- Case presentation
- Feedback from peers and clinical teacher.
- Reflection.

YEAR 5 DXR SCHEDULE

Rotation	DXR SCHEDULE	
1st Cycle	**Releasing date:** 07 September 2014 **Deadline:** 13 November 2014	Male A: SURG 453 Male B: PEDIA 474 Female: MED 441
2nd Cycle	**Releasing date:** **Deadline:**	Male A: PEDIA 474 Male B: MED 441 Female: SURG 453
3rd Cycle	**Releasing date:** **Deadline:**	Male A: MED 441 Male B: SURG 453 Female: PEDIA 474

DXR CASES		
SURGERY 451	**MEDICINE 441**	**PAEDIATRIC 474**
Clarke	Tudori	Anderson
Dewitt	Swensen	Bardy
Grant	Janofsky	Hanson
Greene	Blumenthal	Martin
Guillory	Donner	McCluskey
Holmes	Winters	McMahon
Howard	Pitt	Price
Jackson	Ingram	Sortiz
Morgan	Green	**Plan:** We need to deliver **<u>one case</u>** each week. Starting Week 2. Students have to complete **5 cases** out of 5 cases.
Pilsner	Bishop	
Zur	Dombkoshi	
Plan: We need to deliver **<u>two cases</u>** each week. Starting from Week 2 (Week 2 to Week 7). Students have to complete **___ cases** out of these____ cases.	Tuenge	
	Tanner	
	Plan: We need to deliver **<u>two cases</u>** each week. Starting Week 2. Students have to complete **___ cases** out of _____ cases.	

Learning Resources

The list below comprises the key textbooks and learning resources which have been prescribed and recommended for use in the undergraduate medical course at King Saud University, Year 3. It is expected that you have your own copy of prescribed textbooks and use them as one of your main resources in learning. Before making any purchases, you might carefully examine all other recommended textbooks in an area and chose the text that matches with your needs and your learning style. Although all these texts are available in the Medical Library, you might need to purchase texts that you use frequently in these years as the demand upon library texts is usually high.

Medical Dictionary

Prescribed :

Martin EA (2010). Oxford Concise Medical Dictionary. Oxford: Oxford University Press.

Recommended textbooks:

Dorland (2010). Dorland's Pocket Medical Dictionary with CD-ROM, Twenty-eighth Edition, Elsevier, UK.

Dorland (2007). Dorland's Illustrated Medical Dictionary with CD-ROM, Thirty-first Edition, Elsevier, UK.

General Surgery

Prescribed:

Garden OJ, Bradbury AW, Forsythe JL, Parks RW. Principles and Practice of Surgery. 6th Edition. Elsevier, Churchill Livingstone, UK.

Browse N, Black J, Burnand K, Thomas W. Browse's Introduction to the Symptoms & Signs of Surgical Disease 4th Edition. Elsevier, Churchill Livingstone, UK.

Toy E, Liu T, Campbell A. Case Files Surgery, 4th Edition. McGraw Hill, LANGE, USA.

Recommended:

Townsend Jr CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston Textbook of Surgery: The Biological Basis of Modern Surgical Practice. 19th Edition. Elsevier, UK.

Williams N, Bulstrode C, O'Connell PR. Bailey & Love's Short Practice of Surgery 26th Edition. CRC Group, Taylor & Francis Group, USA.

Henry MM, Thompson JN. Clinical Surgery. Elsevier, Churchill Livingstone, UK.

Internal Medicine

Prescribed:

Kumar P and Clark M. Kumar and Clark's Clinical Medicine, 8th Edition. Elsevier, Churchill Livingstone, UK.

Andreoli TE, Benjamin I, Griggs RC, Wing EJ, Fitz JG. Andreoli and Carpenter's Cecil Essentials of Medicine. 8th Edition. Elsevier, UK.

Toy E and Patlan J. Case Files Internal Medicine, 4th Edition. McGraw Hill, LANGE, USA.

Talley N, O'Connor S. Clinical Examination, 5th Edition. Elsevier, Churchill Livingstone, UK.

Recommended:

Goldman L and Schafer AI. Goldman's Cecil Medicine: Expert Consult Premium Edition, Two Volume Set, 24th Edition, Churchill Livingstone, UK.

Longo D, Fauci A, Kasper D, Hauser S, Jameson J, Loscalzo J. Harrison's Principles of Internal Medicine: Volumes 1 and 2, 18th Edition. Elsevier, Churchill Livingstone, UK.

Paediatrics

Prescribed textbook:

Lissauer T and Clayden G. Illustrated Textbook of Paediatrics; 4th Edition. Elsevier, Mosby, UK

Highly Recommended:

Toy E, Yetman R, Hormann M, Lahoti S, McNeese M, Saners MJ, Geltemever AM. Case Files Pediatrics, 4th Edition. McGraw Hill, LANGE, USA.

Recommended:

Marcdante K, Kliegman RM, Jenson HB. Nelson Essentials of Pediatrics. 6th Edition. Saunders, USA.

Hay W, Levin M, Deterding R, Abzug M. CURRENT Diagnosis and Treatment Pediatrics, Twenty-First Edition. McGraw Hill, LANGE, US

Al-Howasi M, Manual of Clinical Paediatrics. Jarir Bookshop, 2009.

Plagiarism

Plagiarism is a voluntary act to copy sentences and give misleading impression that the text is created by the person whose name appears on the work. For example an assignment submitted as part of the requirements of assessment of a subject.

Plagiarism may include plagiarism of ideas and or plagiarism of text (sentences or paragraphs). It also may include the use of diagrams, tables, images, cartoons etc. without acknowledging the original creator of the work.

The act of copy-and-paste writings even if the aim is to produce a good assignment with well-structured English statements is unethical and when discovered could cause serious consequences including disciplinary action. Students need to construct statements in their own words and refer to the correct references related to what they have written and included in their assignment/work. Giving credit and acknowledgement to the original authors/creators are valued by the academic community as it reflects an ethical and professional attitude.

Why is plagiarism wrong?

Universities, higher education institutes and scientific communities consider plagiarism as a major problem for a number of reasons:

- It is an act of stealing ideas and the work of original authors/creators.
- It does not represent acceptable professional, ethical or scientific behaviour.
- It raises doubts about the credibility of the person/group of people who committed such act.

How can teachers/college discover an act of plagiarism?

There are a number of software programs such as iThentcate and many others available to detect the act of plagiarism. Some of these programs are available free online.

These tools can locate the places and sentences where students have copied and the original resource (articles, manuscripts, papers, books, websites) for such statements/paragraphs or images.

What are the consequences of plagiarism?

Students who commit plagiarism will be exposed to disciplinary action including the failure of the subject concerned provided that such act has been confirmed with evidence.

Key days in Year 5

WEEK	DATE	ACTIVITIES
1	**31 August 2014** (05 Dhulqaddah 1435)	Start of the academic year
4	**23 September 2014** (28 Dhul Qa'dah)	National holiday
7 & 8	**28 September – 11 October 2014** (04 Dhul Hijja to 17 Dhul Hijja 1435)	Eid Holiday
12	**16 November to 20 November 2014** (23 Muharram to 27 Muharram 1435)	Examination
21	-	Mid Semester Holiday (1st semester)
24	**8 February – 12 February 2015** (19 Rabi II – 23 Rabi II 1435)	Examination
30	-	Mid Semester Holiday (2nd Semester)
36	**02 May – 06 May 2015** (13 Rajab – 17 Rajab 1435)	Examination
37 to 40	-	Electives

KING SAUD UNIVERSITY
COLLEGE OF MEDICINE
DEPARTMENT OF MEDICAL EDUCATION
EXAMINATION UNIT
ASSESSMENT AND EVALUATION CENTER

ASSESSMENT PLAN FOR

COURSE SURGERY 453

A. CONTINOUS ASSESSMENT- (40 MARKS) WHICH CONSIST OF:

1. **MIDTERM WRITTEN EXAM: 60-70 MCQ'S (25 MARKS)**

2. **CLINICAL REQUIREMENTS**
   - **CASE BASED LEARNING- (10 MARKS)**
   - **PROCEDURES- (5 MARKS)**

B. FINAL ASSESSMENT: (60 MARKS)

1. **FINAL EXAM: 80-100 MCQ'S (20 MARKS)**

2. **CLINICAL ASSESSMENTS – (40 MARKS)**
   a. **5 MODIFIED ESSAY QUESTION (MEQ) (10 MARKS)**
   b. **OSCE- 6 STATION/ 5 MARKS EACH STATION (30 MARKS)**

KING SAUD UNIVERSITY
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DEPARTMENT OF MEDICAL EDUCATION
EXAMINATION UNIT
ASSESSMENT AND EVALUATION CENTER

ASSESSMENT PLAN FOR

DEPARTMENT OF MEDICINE

A. CONTINOUS ASSESSMENT- (40 MARKS) WHICH CONSIST OF:

1. **MIDTERM WRITTEN EXAM: 50-70 MCQ'S (25 MARKS)**

2. **CLINICAL REQUIREMENTS**
   - **CASE BASED LEARNING- (10 MARKS)**
   - **PROCEDURES- (5 MARKS)**

B. FINAL ASSESSMENT: (60 MARKS)

1. **FINAL EXAM: 80-100 MCQ'S (20 MARKS)**

2. **CLINICAL ASSESSMENTS – (40 MARKS)**
   c. **5 MODIFIED ESSAY QUESTION (MEQ) (10 MARKS)**
   d. **OSCE- 6 STATION/ 5 MARKS EACH STATION (30 MARKS)**

KING SAUD UNIVERSITY
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DEPARTMENT OF MEDICAL EDUCATION
EXAMINATION UNIT
ASSESSMENT AND EVALUATION CENTER

ASSESSMENT PLAN FOR

DEPARTMENT OF PAEDIATRIC

A. CONTINOUS ASSESSMENT- (40 MARKS) WHICH CONSIST OF:

1. **MIDTERM WRITTEN EXAM: 50 MCQ'S (25 MARKS)**

2. **CLINICAL REQUIREMENTS: (15%)**

✓ **Clerking of 3 cases**	**4%**
✓ **Presentation of 3 cases**	**3%**
✓ **Observation of common cases and clinical signs**	**2%**
✓ **Professional attitude**	**2%**
✓ **Clinical skills lab**	**2%**
✓ **DxR**	**2%**

B. FINAL ASSESSMENT: (60 MARKS)

1. **FINAL EXAM: 80-100 MCQ'S (30 MARKS)**

2. **CLINICAL ASSESSMENTS – (30 MARKS)**
   a. **MODIFIED ESSAY QUESTION (MEQ / Slides / Extended Matching Questions) (10 MARKS)**
   b. **OSCE – 5 STATION – (20 MARKS)**

Examination Calendar

1435-36 EXAMINATION SCHEDULE - YEAR 5 CYCLE 1						
SL NO	**SUBJECT**	**GROUP**	**EXAMINATION TYPE**	**GREGORIAN**	**HIJRI**	**DAY**
1	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 453)**	**MALE A**	**MID-TERM**	**23/10/2014**	**29/12/1435**	**THURSDAY**
2	INTERNAL MEDICINE PRACTICE **(MED 441)**	**FEMALE**	**MID-TERM**	**23/10/2014**	**29/12/1435**	**THURSDAY**
3	PAEDIATRICS **(PED 474)**	**MALE B**	**MID-TERM**	**23/10/2014**	**29/12/1435**	**THURSDAY**
4	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 453)**	**MALE A**	**FINAL**	**16/11/2014**	**23/01/1436**	**SUNDAY**
5	PAEDIATRICS **(PED 474)**	**MALE B**	**FINAL**	**17/11/2014**	**24/01/1436**	**MONDAY**
6	INTERNAL MEDICINE PRACTICE **(MED 441)**	**FEMALE**	**FINAL**	**17/11/2014**	**24/01/1436**	**MONDAY**
7	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 453)**	**MALE A**	**OSCE**	**19/11/2014**	**26/01/1436**	**WEDNESDAY**
8	PAEDIATRICS **(PED 474)**	**MALE B**	**OSCE**	**20/11/2014**	**27/01/1436**	**THURSDAY**
9	INTERNAL MEDICINE PRACTICE **(MED 441)**	**FEMALE**	**OSCE**	**20/11/2014**	**27/01/1436**	**THURSDAY**

1435-36 EXAMINATION SCEDULE - YEAR 5 CYCLE 2						
SN	**SUBJECT**	**GROUP**	**EXAMINATION TYPE**	**GREGORIAN**	**HIJRI**	**DAY**
1	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 453)**	**FEMALE**	**MID-TERM**	**28/12/2014**	**06/03/1436**	**SUNDAY**
2	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE B**	**MID-TERM**	**28/12/2014**	**06/03/1436**	**SUNDAY**
3	PAEDIATRICS **(PED 474)**	**MALE A**	**MID-TERM**	**04/01/2015**	**13/03/1436**	**SUNDAY**
4	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 451)**	**FEMALE**	**FINAL**	**08/02/2014**	**19/04/1436**	**SUNDAY**
5	PAEDIATRICS **(PED 474)**	**MALE A**	**FINAL**	**09/02/2015**	**20/04/1436**	**MONDAY**
6	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE B**	**FINAL**	**09/02/2015**	**20/04/1436**	**MONDAY**
7	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 451)**	**FEMALE**	**OSCE**	**11/02/2015**	**22/04/1436**	**WEDNESDAY**
8	PAEDIATRICS **(PED 474)**	**MALE A**	**OSCE**	**12/02/2015**	**23/04/1436**	**THURSDAY**
9	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE B**	**OSCE**	**12/02/2015**	**23/04/1436**	**THURSDAY**

1434-35 EXAMINATION SCEDULE - YEAR 5 CYCLE 3						
SN	**SUBJECT**	**GROUP**	**EXAMINATION TYPE**	**GREGORIAN**	**HIJRI**	**DAY**
1	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 451)**	**MALE B**	**MID-TERM**	**29/03/2015**	**09/061436**	**SUNDAY**
2	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE A**	**MID-TERM**	**29/03/2015**	**09/061436**	**SUNDAY**
3	PAEDIATRICS **(PED 474)**	**FEMALE**	**MID-TERM**	**05/04/2015**	**16/06/1436**	**SUNDAY**
4	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 451)**	**MALE B**	**FINAL**	**03/05/2015**	**14/07/1436**	**MONDAY**
5	PAEDIATRICS **(PED 474)**	**FEMALE**	**FINAL**	**03/05/2015**	**14/07/1436**	**MONDAY**
6	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE A**	**FINAL**	**04/05/2015**	**15/07/1436**	**MONDAY**
7	GENERAL SURGERY & ANESTHESIA PRACTICE **(SURG 451)**	**MALE B**	**OSCE**	**06/05/2015**	**17/07/1436**	**WEDNESDAY**
8	PAEDIATRICS **(PED 474)**	**FEMALE**	**OSCE**	**06/05/2015**	**17/07/1436**	**THURSDAY**
9	INTERNAL MEDICINE PRACTICE **(MED 441)**	**MALE A**	**FINAL**	**07/05/2015**	**18/07/1436**	**THURSDAY**

MALE GROUP~A

MALE
GROUP~B

SN	Student Number	Student Name
1	426100710	Mohammed Saleh Al Issa
2	427101339	Abdullah Nasser Al Dosari
3	428100807	Asim Yosef Al Motawa
4	428101619	Abdullah bin Saad bin Abdullah AlSleem
5	429101111	Fahd Issa Al Rumaih
6	429401084	Hatim DakailAlha Al Malke
7	429401096	Ali Saud Mohammed Al Habr
8	429401129	Fahad Moneef Al-Mutairy
9	430101597	Mohanned Abdulmohsen Al Essa
10	430101687	Ibrahim Abdulrahman Al-Faris
11	430101688	Saud Mohammed Al Mousa
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56	430105287	Abdulwahab Abdulaziz Al Wehaibi
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60	430105798	Abdullah Mousa Muthaffar Khan
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SUBJECTS TAUGHT IN YEAR 5

GENERAL SURGERY (SURG-453)

General Information

Subject Title	:	General Surgery
Block Code & Number	:	SURG-453
Credit Hour	:	10
Subject Duration	:	36 Weeks
Subject Dates	:	31 August 2014 – 06 May 2015
Subject Chair	:	Dr. Hamad Al Qahtani

Learning Objectives:

The aim of this document is to develop explicit and comprehensive outcomes for the surgical curriculum in year 5 and to identify competencies that should be demonstrated by medical students on completion of year 5. These competencies specify knowledge, behavior, skills and attitude that the learners should demonstrate. General Surgery has been taught in year 3. A summary of key objectives in year 3 include: (i) enabling smooth transition of students' learning in the hospital environment (ii) enhancing students' skills in pathophysiology of diseases as the basis for clinical medicine and surgery, (iii) building on what students learnt in the early clinical skills in years 1 and 2 in areas such as taking a medical history and conducting a physical examination, (iv) linking basic biomedical sciences and bio-psychosocial concepts with clinical medicine, (v) applying knowledge learnt in a clinical context (vi) fostering students' communication skills and the ability to take medical history and conduct a physical examination of patients and simulated patients, and (vii) emphasizing student's professional attitude in their day-to-day learning.

The National Commission for Academic Accreditation & Assessment (NCAAA) in a recent document entitled, "Program Learning Outcomes Guidelines for Program Development and Review ", issued in August 2011, introduced "Outcomes" instead of "Learning Objectives" for program development and review. On this basis, the year 5 objectives have been defined as outcomes. In fact the outcomes cover three main elements that ensure that a graduate (trained to become a doctor) is competent. :

First element: What a graduate (doctor) is able to do?

Second element: How does a graduate (doctor) approach patients?

Third element: What professional attitude/behavior is demonstrated by a graduate (doctor)?

Therefore the learning outcomes can be allocated under these domains:

1. Clinical skills.
2. Patient investigation and management.
3. Clinical procedure
4. Knowledge: basic biomedical, bio-psychosocial and clinical sciences.
5. Communication skills
6. Professional attitude, ethics, and legal responsibilities.
7. Disease prevention and health promotion.
8. Self-development, self-directed learning, and preparation to join the medical work force.

The outcomes stated below have been designed with the following principles in mind:

First: Identifying key educational outcomes related to each domain and linking them with the elements discussed earlier.

Second: Defining the outcomes at a level of detail that can be understood by learners and clinical teachers.

Third: Translating these outcomes into specific teaching and learning methodology to be used. The aim is to ensure that the methods used are able to make these outcomes achievable by most students.

1. **Clinical Skills:**

(i) Taking a history from patient: Students demonstrate the ability to:

- Take a medical history from a wide range of patients presenting with common surgical conditions.
- Take focused and complete (comprehensive) history and the history should illustrate a patient-centred approach.
- Keep a balance between the big picture and the essential fine details in their history.
- Address details in a chronological order and state sequence of events (progression of disease/ new diseases) in a meaningful way.
- Present their findings in a systemic and sound way.

(ii) Conduct physical examination of patients: Students demonstrate the ability to:

- Conduct general and system based physical examination in a standardized and correct order.
- Elicit key physical signs correctly and be able to interpret their findings correctly.
- Present their findings in a systematic way and link their findings with findings obtained from history.

(iii) Generate a diagnosis: Students demonstrate the ability to:

- Use the findings obtained from history and clinical signs to prioritize between their original hypotheses.
- Group their hypotheses into most likely and those that have been included.
- Define their differential diagnosis.
- Provide a justification to support their views/decisions.

2. Patient investigations and patient management:

(i) **Explain the principles behind patient investigations:** Students demonstrate the ability to:

- Justify their views for selecting particular investigations.
- Present an order of investigations needed and how the results of these investigations can help them.
- Obtain informed consent from patients or authorized relative.
- Prepare the patient for investigations to be conducted by explaining to the patient/relatives why the investigation needed, how it will help in patient management, risks/complications, and briefly explain the procedure (such as in endoscopy).
- The lists of laboratory, radiological and other investigations are listed in appendix 1.

(ii) **Patient management:** Students demonstrate the ability to:

- Outline the goals of patient management plan. This should be clearly outlined in 4-5 points and created in a student-centred way and in a holistic approach. It should be designed in a way that reflects the information obtained from history, clinical

examination, investigation results, and the patient's condition (emergency, versus acute, subacute or chronic).

- Discuss options available to address each of the goals stated.
- Share the patients and their relatives in the management plan and explain to them the benefits and the disadvantages of each option (for example, Surgery, vs Medical vs Radiotherapy).
- Explain the surgery needed its indications, contraindications, and complications of common procedures and take an informed consent.
- Discuss drug knowledge and demonstrate prescribing skills particularly for drugs commonly prescribed by surgeons. This includes indications, mechanisms of action, calculation of doses, side-effects, and contraindications.
- Discuss post-operative care and therapeutic services needed after surgery such as physiotherapy, occupational therapy and rehabilitation needed.
- Demonstrate systemic approach in their management and the ability of safe practice.
- Recognize the manage chronic conditions, use appropriate approaches, consider the consequences of disease or management such as loss of mobility, disability, and colostomy bag care.
- Recognise their limits of competence and seek appropriate help/advice from consultants and members in the health team as needed.
- Handle uncertainty appropriately and realize that in medicine patients may present with diseases not necessary in the typical pattern described in the textbooks.

(iii) **Management of life threatening conditions: S**tudents demonstrate the ability to:

- Recognize the manage life threatening conditions and emergency situations at the undergraduate medical level including:

  - Multiple trauma.
  - Acute upper gastrointestinal haemorrhage.
  - Acute abdomen.
  - Infection, sepsis including peritonitis.
  - Head injuries.
  - Spinal cord injury,
  - Burns

- Provide pre and post-operative care for surgical patients including assessment of pre-operative risk, assess and manage bleeding including the use of blood products, and assess post-operative patients for any complications.
- Recognize the management of acute care management and life threatening conditions in the early period following emergency managing (e.g., patients with extensive burns, patients with multiple trauma, patients with peritoneal sepsis etc).

3. Clinical procedures:

(i) Clinical procedures: Students demonstrate the ability to:

- Correctly and efficiently conduct essential clinical procedures including:

  - Venipuncture
  - Take blood culture
  - Establish intravenous access
  - Scrub up and gown for surgical procedures
  - Skin/ muscle suturing
  - Wound care, sterile dressing and wound drainage
  - Parenteral administration of medications
  - Insertion of a central line
  - Catheterization of male and female bladder
  - Insert a nasogastric tube

- Care for a colostomy bag
- Perform a proctoscopy.
- Perform a faecal occult blood test.
- Dispose used sharps and waste. (See examples in appendix 2).

- Conduct these procedures on mannequin and on real patients (under clinical teachers' supervision).
- Define basic sciences related to clinical procedures in regard to understanding of anatomy, relationships of structures, and how to conduct a procedure safely.
- Discuss possible complications that may occur as a result of each of these clinical.
- Obtain informed consent from patients or authorized relative.

4. <u>Knowledge in clinical, biosychosocial, and basic biomedical sciences.</u>

(i) <u>Clinical Sciences:</u> Students demonstrate the ability to:

- Discuss the aetiology, epidemiology, pathology, and pathogenesis, clinical presentations, complications, and prognosis of common surgical conditions (appendix 3).
- Explain the role of behaviour, biopsychosocial, genetics, and environmental factors in the development of surgical conditions (e.g., cancer).
- Discuss staging, prognosis, and treatment plan of common malignant conditions.
- Recognise symptoms and signs of common surgical conditions.
- Define the role of surgery as a management option in managing common surgical conditions.
- Discuss the impact of surgical conditions and outcomes of surgery on patient's life, and his family.
- Use knowledge learnt in justifying their views.

(ii) **Biomedical Sciences:** Students demonstrate the ability to:

- Apply knowledge obtained from anatomy, physiology and pathophysiology to surgical conditions and surgical clinical procedures (e.g., anatomical structures related to hernia, anatomical structures related to breast, anatomical structures and blood supply of abdominal organs, surface anatomy, cardiorespiratory physiology, fluid balances, and homeostasis, pathophysiology of blood loss, metabolic changes after surgery, multi-organ dysfunction syndrome, blood products and their use in surgical conditions)

- Apply pathological and microbiological principles related to surgery (e.g., cancer pathology, inflammatory bowel disease pathology, wound infection, common pathogens in surgical patient, infection caused by gas producing organisms).
- Apply knowledge obtained from pharmacology relevant to surgery and safe prescribing of common drugs used by surgeons (antibiotics- principles of prophylaxis and treatment, side effects, indications, antibiotic sensitivity, and other drugs such as analgesics, warfarin, heparin, etc.)

5. Communication skills: Students demonstrate the ability to:

- Communicate in an effective way with the patients, patients' relatives, careers, their colleagues, supervisors, and all members in the health team. They should be able to demonstrate excellent communication skills with the public and with people from a broad range of socioeconomic and cultural background. They should demonstrate their communication orally, and in writing.

- Listen carefully during their communication and demonstrate respect and professional manners during their communication.

- Explain to the patient and family members about the patient's illness using simple and clear language without using medical jargons/medical terms.

- Educate patients with the purpose of health promotion and disease prevention.

- Participate effectively as a collaborative member or a member of a team representing his/her team and be able to present the views of the team without personal bias and in a fair way.

6. **Professional attitude, ethics, and legal responsibilities:**

Students demonstrate the ability to:

- Ensure personal integrity, accountability, reliability, honesty, and trustworthy in their day-to-day behavior towards others including patients, peers, patients' relatives, supervisors, and members of the community.
- Treat patient's matters and health information as confidential and know the special circumstances where confidentiality my not apply such as police investigations, or endangered health risks.
- Manage their time effectively and make priorities as per their responsibilities.
- Balance demands of family, work and community service as appropriate and be able to recognize their own health needs and seek professional help as needed.

7. **Disease prevention and health promotion:** Students demonstrate the ability to:.

- Identify patients at higher risks of developing health problems and work with them through education, and mutual plan to minimize such risks and early detect any changes (e.g., those at higher risk of developing liver cancer or colorectal cancer).
- Use health promotion strategies in hospital environment and in the wider community to help in disease prevention.
- Look for options that can improve health and enable early detection of health problems (e.g., use of screening laboratory tests and ultrasound in the early detection of liver cancer in patients with hepatitis c, and screening patients with inflammatory bowel disease for the early detection of colorectal cancer).

8. **Self-development, self-directed learning, and preparation to join the medical work force:**. Students demonstrate the ability to:

   - Define their learning needs, learning resources and strategies to improve their performance and skills.
   - Continuously plan, manage and monitor their progress.
   - Identify their areas of strengths and areas that need to be developed further and improved.

Appendix 1: A list of laboratory, radiological, and other investigations

Laboratory-based investigations:

Students should demonstrate knowledge in relation to laboratory-based laboratory tests ordered in common surgical conditions. They should be able to:

- Explain why they need such investigations
- Discuss the scientific basis behind a test.
- Discuss the possible outcomes.
- Interpret the results and discuss the sensitivity and specificity of a test.
- Link the results to findings obtained from history and physical examination.
- Use knowledge obtained in refining their hypotheses and decision machining.

The laboratory-based tests include:

- Biochemical tests (e.g., liver function tests, blood urea, creatinine, sodium, potassium, calcium, magnesium electrolytes, urinalysis, serum albumin, globulin, blood glucose level, blood lipids, INR test, bleeding time, arterial blood gases, serum iron studies, thyroid function tests, other hormonal assays, etc).
- Haematology tests (e.g., full blood count, differential counts, blood film, haemoglobin electrophoresis, etc).
- Microbiology tests (e.g., blood culture, urine culture, wound swab culture, stool culture, antibiotic sensitivity tests, special cultures, Gram-stain, Acid-fast stain etc)
- Pathology studies (e.g, surgical pathology and histopathological studies).
- Cytology studies.
- Genetic tests (e.g., predictive tests such as PRCA 1 in breast cancer, diagnostic tests and carrier tests).
- Immunology studies (e.g., immunoblotting, ELISA, and immunohistochemical staining).

Radiological investigations:

Students should demonstrate knowledge in relation to radiological investigations ordered in common surgical conditions. They should be able to:

- Explain the different modalities of radiological investigations.
- The uses of each modality.
- Justify the appropriateness of their selection for the surgical condition they are studying.
- Discuss the possible outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination.

These investigations include: X-rays, CT scans, MRI studies, ultrasound, nuclear medicine and nuclear imaging etc.

Clinical investigations:

Students should demonstrate knowledge in relation to clinical investigations ordered in common surgical conditions. They should be able to:

- Explain the different tests used, and discuss the uses of each test. .
- Justify the appropriateness of their selection for the surgical condition they are studying.
- Discuss the possible outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination nation.

These tests include:

- Pleural tap and pleural biopsy
- Upper GI endoscopy
- Lower GI endoscopy
- Cystoscopy
- Skin biopsy

Appendix 2: Examples for clinical skill topics and required abilities and skills.

Topic	Required abilities and skills
Venipuncture	• Selection of needle, syringe (if aim at collection of blood) and
	• preparations (if aim at insertion of cannula for intravenous access).
	• Sterile technique.
	• Technique and communication with patient during the procedure.
	• Completing the procedure successfully, label blood tube correctly (if aim
	• is blood collection), and safe disposal of used needle etc.
Skin suturing	• Selection of Instruments needed (needle holder, forceps with teeth,
	• needle, and select thread).
	• Sterile technique
	• Suturing technique, conducting suturing correctly.
	• Knowing time to remove stitches and removal of stitches skills.
Wound dressing	• Sterile technique.
	• Knowing what you are looking for (looking for signs of healing,
	• inflammation, infection etc).
	• What should be done in each situation?

Principles:

- Metabolic response to injury
- Shock
- Wound and tissue repair
- Surgical infection
- Blood transfusion
- Perioperative care
- Transplantation

Skin, head and neck:

- Benign and malignant skin and subcutaneous lesions
- Benign and malignant lesions of the mouth and tongue
- Neck swellings/masses

Gastrointestinal and hepatobiliary:

- Oesophageal disorders
- Peptic ulcer disease
- Gallbladder, hepatic and pancreatic diseases including benign and malignant conditions
- Intestinal obstruction
- Diverticular disease
- Inflammatory bowel disease
- Gastrointestinal malignancy
- Appendicitis
- Adhesions

- Abdominal hernias
- Abdominal pain
- Abdominal swelling
- Gastrointestinal haemorrhage
- Rectal bleeding
- Intestinal perforation
- Haemorrhoids
- Anal fissure and other perianal diseases
- Abdominal wall stoma

Genitourinary disease:

- Genitourinary malignancy
- Urinary calculus disease
- Urinary tract infection
- Benign prostatic hyperplasia
- Obstructive uropathy
- Scrotal swelling
- Testicular pain
- Renal transplantation

Endocrine disorders & Breast:

- Thyroid and parathyroid disease
- Adrenal gland disease
- Diabetes and diabetic complications/ulcers
- Benign and malignant breast lumps
- Mastitis and breast abscess

Peripheral vascular disease:

- Atherosclerosis/chronic and acute limb ischemia
- Aneurysmal disease
- Varicose veins/venous insufficiency
- Embolic and thrombotic arterial disease
- Diabetic ulceration

Respiratory diseases:

- Bronchial carcinoma
- Space occupying lesions of the chest
- Pneumothorax
- Lung transplantation

Neurosurgery:

- Space occupying lesion from bleeding and tumour
- Spinal injury

Teaching & Learning:

- Interactive lectures
- Tutorials
- Small group discussion
- Bed-side teaching
- Out-patient clinic
- Operation room
- Clinical Skills Lab

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INTERNAL MEDICINE (MED~441)

General Information

Subject Title	:	Internal Medicine
Block Code & Number	:	MED-441
Credit Hour	:	10
Subject Duration	:	36 Weeks (12 weeks / cycle)
Subject Dates	:	31 August 2014 – 06 May 2015
Subject Chair	:	Dr. Iram Shakir Kiani

Learning Objectives:

The aim of this document is to develop explicit and comprehensive outcomes for Internal Medicine curriculum in year 5 and to identify competencies that should be demonstrated by medical students on the completion of year 5. These competencies specify knowledge, behaviour, skills and attitude that the learners should demonstrate. Internal Medicine has been taught in year 3. The key objectives of the subject in year 3 are: (i) Introducing students to real patient and ensuring smooth transition to the hospital environment (ii) Enhancing students' skills in pathophysiology of diseases as the basis for clinical medicine, (iii) Building on what students learnt in the early clinical skills in years 1 and 2 in areas such as taking a medical history and conducting a physical examination, (iv) Linking basic biomedical sciences and biopsychosocial concepts with clinical medicine, (v) Applying knowledge learnt in a clinical context (vi) Fostering students' communication skills and the ability to take medical history and conduct a physical examination of patients and simulated patients, and (vii) Emphasizing student's professional attitude in their day-to-day learning.

The National Commission for Academic Accreditation & Assessment (NCAAA) in a recent document entitled, "Program Learning Outcomes Guidelines for Program Development and

Review ", issued in August 2011. The document introduced "Outcomes" instead of "Learning Objectives" for program development and review. On this basis, the year 5 learning outcomes have been defined under three main elements with the aim to ensure that a graduate (trained to become a doctor) is competent. :

First element: What a graduate (doctor) is able to do?

Second element: How does a graduate (doctor) approach patients?

Third element: What professional attitude/behavior is demonstrated by a graduate (doctor)?

Therefore the learning outcomes can be allocated under these domains:

1. Clinical Skills.
2. Patient investigation and management.
3. Clinical procedures.
4. Knowledge: basic biomedical, biopsychosocial and clinical sciences.
5. Communication skills
6. Professional attitude, ethics, and legal responsibilities.
7. Disease prevention and health promotion.
8. Self-development, self-directed learning, and preparation to join the medical work force.

The outcomes stated below have been designed with the following principles in mind:

First: Identifying key educational outcomes related to each domain and linking them with the elements discussed earlier.

Second: Defining the outcomes at a level of detail that can be understood by learners and clinical teachers.

Third: Translating these outcomes into specific teaching and learning methodology to be used. The aim is to ensure that the methods used are able to make these outcomes achievable by most students.

1. Clinical Skills:

(i) Taking a history from patient: Students demonstrate the ability to:

- Take a medical history from adult patients presenting with common medical conditions.
- Take focused and complete (comprehensive) history outlined in a patient-centred approach.
- Keep a balance between the big picture and the essential fine details in their history.
- Address details in a chronological order and state sequence of events (progression of disease/ new diseases) in a meaningful way.
- Present their findings in a systematic and sound way.

(ii) Conduct physical examination of patients: Students demonstrate the ability to:

- Conduct general and system based physical examination in a standardized and correct order.
- Elicit key physical signs correctly and be able to interpret their findings correctly.
- Present their findings in a systematic way and link their findings with findings obtained from history.

(iii) Generate a diagnosis: Students demonstrate the ability to:

- Use the findings obtained from history and clinical signs to prioritize between their original hypotheses.
- Group their hypotheses into most likely, least likely and those that have been excluded.
- Define their differential diagnosis.
- Provide a justification to support their views/decisions.

2.Patient investigations and patient management:

(i) **Explain the principles behind patient investigations:** Students demonstrate the ability to:

- Justify their views for selecting particular investigations.
- Present an order of investigations needed and how the results of these investigations can help them.
- Obtain informed consent from patients or authorized relative.
- Prepare the patient for investigations to be conducted by explaining to the patient/relatives why the investigation needed, how it will help in patient management, risks/complications, and briefly explain the procedure (such as in endoscopy).

The lists of laboratory, radiological and other investigations are listed in appendix 1.

(ii) **Patient management:** Students demonstrate the ability to:

- Outline the goals of patient management plan. This should be clearly outlined in 4-5 points and created in a student-centred way and in a holistic approach. It should be designed in a way that reflects the information obtained from history, clinical examination, investigation results, and the patient's condition (emergency, versus acute, subacute or chronic).
- Discuss options available to address each of the goals stated.
- Share the patients and their relatives in the management plan and explain to them the

benefits and the disadvantages of each option (for example, Surgery, vs Medical vs Radiotherapy).

- Explain the management plan including patient education, medications to be prescribed, and follow up needed. Students should be able to select the drug of choice, and provide a justification for their selection.
- Discuss the indications, contraindications, complications and side-effects of common drugs used in acute and chronic medical conditions.
- Discuss therapeutic services needed after medical management such as physiotherapy, occupational therapy and rehabilitation needed (e.g., after stroke).
- Demonstrate systemic approach in their management and the ability of safe practice.
- Recognize the manage chronic conditions, use appropriate approaches, consider the consequences of disease or management such as loss of mobility, disability, and colostomy bag care.
- Recognize their limits of competence and seek appropriate help/advice from consultants and members in the health team as needed.
- Handle uncertainty appropriately and realize that in medicine patients may present

with diseases not necessary in the typical pattern described in the textbooks.

(iii) **Management of life threatening conditions: S**tudents demonstrate the ability to:

- Recognize the manage life threatening conditions and emergency situations at the undergraduate medical level including:

  - Haematemesis
  - Haempotesis
  - Severe acute asthma
  - Respiratory failure
  - Diabetic ketoacidosis
  - Acute renal failure
  - Shock
  - Coma
  - Anaphylaxis
  - Status epileptics
  - Myocardial infarction
  - Angina
  - Renal colic

- Systemic infection
- Hypoglcaemia
- Severe hypertension
- Hepatic encephalopathy

Clinical procedures:

(i) Clinical procedures: Students demonstrate the ability to:

- Correctly and efficiently conduct essential clinical procedures including:
  - Venipuncture
  - Take blood culture
  - Establish intravenous access
  - Parenteral administration of medications
  - Insertion of a central line
  - Catheterization of male and female bladder
  - Insert a nasogastric tube
  - Perform a faecal occult blood test
  - Dispose used sharps and waste. (See examples in appendix 2)

- Conduct these procedures on mannequin and on real patients (under clinical teachers' supervision)
- Define basic sciences related to clinical procedures in regard to understanding of anatomy, relationships of structures, and how to conduct a procedure safely
- Discuss possible complications that may occur as a result of each of these clinical procedures

4. **Knowledge in clinical, biosychosocial, and basic biomedical sciences.**

(i) Clinical Sciences: Students demonstrate the ability to:

- Discuss the aetiology, epidemiology, pathology, and pathogenesis, clinical presentations, complications, and prognosis of common medical presentations (appendix 3).
  Explain the role of behaviour, biopsychosocial, genetics, and environmental factors in the development of medical conditions (e.g., diabetes mellitus).
- Discuss staging, prognosis, and treatment plan of common malignant conditions.
- Recognise symptoms and signs of common medical conditions.
- Discuss the impact of chronic medical conditions on quality of life and types of support needed.
- Use knowledge learnt in justifying their views.

(ii) Biomedical sciences: Students demonstrate the ability to:

- Apply knowledge obtained from anatomy, physiology and pathophysiology to medical conditions and clinical procedures (e.g., referred pain, surface anatomy, cardiorespiratory physiology, fluid balances, and homeostasis, pathophysiology of blood loss, multi-organ dysfunction syndrome, blood products and their use in haemophilia, Thalassaemia major etc).
- Apply pathological and microbiological principles related to medical conditions (e.g., acute and chronic infectious conditions).
- Apply knowledge obtained from pharmacology and therapeutics to relevant medical conditions and demonstrate safe prescribing skills for common drugs used in acute and chronic medical conditions (e.g., Heparin, warfarin, antihypertensive drugs, insulin, oral hypoglycemic agents, antibiotics, anti-tuberculosis drugs, drugs used in heart failure, lipid lowering drugs, anti-epileptic drugs, drugs used in bronchial asthma, and treatment of peptic ulcer etc).

5. **Communication skills:** Students demonstrate the ability to:

- Communicate in an effective way with the patients, patients' relatives, careers, their colleagues, supervisors, and all members in the health team. They should be able to demonstrate excellent communication skills with the public and with people from a broad range of socioeconomic and cultural background. They should demonstrate their

communication orally, and in writing.

- Listen carefully during their communication and demonstrate respect and professional manners during their communication.
- Explain to the patient and family members about the patient's illness using simple and clear language without using medical jargons/medical terms.
- Educate patients with the purpose of health promotion and disease prevention.
- Participate effectively as a collaborative member or a member of a team representing his/her team and be able to present the views of the team without personal bias and in a fair way.

6. **Professional attitude, ethics, and legal responsibilities:** Students demonstrate the ability to:.

- Ensure personal integrity, accountability, reliability, honesty, and trustworthy in their day-to-day behavior towards others including patients, peers, patients' relatives, supervisors, and members of the community.
- Treat patient's matters and health information as confidential and know the special circumstances where confidentiality my not apply such as police investigations, or endangered health risks.
- Manage their time effectively and make priorities as per their responsibilities.
- Balance demands of family, work and community service as appropriate and be able to recognize their own health needs and seek professional help as needed

7. **Disease prevention and health promotion:** Students demonstrate the ability to:.

- Identify patients at higher risks of developing health problems and work with them through education, and mutual plan to minimize such risks and early detect any changes (e.g., those at higher risk of developing liver cancer or colorectal cancer).
- Use health promotion strategies in hospital environment and in the wider community to help in disease prevention.
- Look for options that can improve health and enable early detection of health problems (e.g., use of screening laboratory tests and ultrasound in the early detection of liver cancer in patients with hepatitis c, and screening patients with inflammatory bowel disease for the early detection of colorectal cancer).

8. **Self-development, self-directed learning, and preparation to join the medical work force:**. Students demonstrate the ability to:.

- Define their learning needs, learning resources and strategies to improve their performance and skills.
- Continuously plan, manage and monitor their progress.
- Identify their areas of strengths and areas that need to be developed further and improved.

Appendix 1: A list of laboratory, radiological, and other investigations

Laboratory-based investigations:

Students should demonstrate knowledge in relation to laboratory-based laboratory tests ordered in common acute and chronic medical conditions. They should be able to:

- Explain why they need such investigations.
- Discuss the scientific basis behind a test.
- Discuss the possible outcomes.
- Interpret the results and discuss the sensitivity and specificity of a test.
- Link the results to findings obtained from history and physical examination.
- Use knowledge obtained in refining their hypotheses and decision machining.

These laboratory-based tests include:

- Biochemical tests (e.g., liver function tests, blood urea, creatinine, sodium, potassium, calcium, magnesium electrolytes, urinalysis, serum albumin, globulin, biomarkers of myocardial infarction, blood glucose level, blood lipids, INR test, bleeding time, arterial blood gases, serum iron studies, thyroid function tests, other hormonal assays, etc).
- Haematology tests (e.g., full blood count, differential counts, blood film, haemoglobin electrophoresis, etc).
- Microbiology tests (e.g., blood culture, urine culture, wound swab culture, stool culture, antibiotic sensitivity tests, special cultures, Gram-stain, Acid-fast stain etc)
- Pathology studies (e.g, histopathological studies).
- Cytology studies.
- Genetic tests (e.g., predictive tests such as PRCA 1 in breast cancer, diagnostic tests and carrier tests).
- Immunology studies (e.g., immunoblotting, ELISA, and immunohistochemical staining).

Radiological investigations:

Students should demonstrate knowledge in relation to radiological investigations ordered in common acute and chronic medical conditions. They should be able to:

- Explain the different modalities of radiological investigations.
- The uses of each modality.
- Discuss the possible uses and outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination.

These investigations include: X-rays, CT scans, MRI studies, ultrasound, nuclear medicine and nuclear imaging etc.

Clinical investigations:

Students should demonstrate knowledge in relation to clinical investigations ordered in common medical conditions. They should be able to:

- Explain the different tests used, and discuss the uses of each test.
- Justify the appropriateness of their selection for the medical condition they are studying.
- Discuss the possible outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination.

These tests include:

- Upper GI endoscopy.
- Lower GI endoscopy.
- ECG.
- Echocardiogram.
- Cardiac catheterization.

Appendix 2: Examples for clinical skill topics and required abilities and skills.

Topic	Required abilities and skills
Venepuncture	- Selection of needle, syringe (if aim at collection of blood) and preparations (if aim at insertion of cannula for intravenous access). - Sterile technique. - Technique and communication with patient during the procedure. - Completing the procedure successfully, label blood tube correctly (if aim is blood collection), and safe disposal of used needle etc.
Catheterisation	- Prepare the table for catheterisation. - Sterile technique. - Technique and communication with patient during the procedure. - Completing the procedure successfully, test that the catheter in the correct place, secure the catheter in situ. - Record in the patient's file what was done and give instructions.
ECG	- Understand how to use the machine - Prepare the patient. - Knowing what you are looking for (basic normal ECG, and key changes in diseases such as AF, supraventricular tachycardia, ischemia, MI etc). - What is your differential diagnosis?

Appendix 3: Common medical presentations

The following common presentations are recommended for 5th year medical students for the subject:

- Chest pain
- Abdominal pain
- Loin pain and dysuria
- Joint pain
- Back pain and neck pain
- Indigestion
- Headache
- Cancer pain
- Pallor
- Vomiting blood
- Blood in urine
- Bleeding per rectum
- Immobility
- Falls
- Collapse
- Confusion
- Dizziness
- Fits
- Tremor
- Peripheral neuropathy
- Chest infection
- Rash and fever
- Uretheral discharge
- Pyrexia of unknown origin
- Sweating
- Wheezing
- Shortness of breath
- Cough
- Oedema of the lower limbs
- Enlargement of the abdomen
- Yellow sclerae
- Low blood pressure
- High blood pressure
- Changes in bowel habits
- Thirsty
- Weight loss
- Coma
- Palpitation

Teaching & Learning:

- Interactive lectures
- Tutorials
- Small group discussion
- Bed-side teaching
- Out-patient clinic
- Operation room
- Clinical Skills Lab.

Student's Logbook

Ensure that your tutor sign your Logbook for the teaching/learning activities required from you to complete. The logbook aims at considering these points:

- Attendance of clinical sessions and small group discussion.
- Ability to complete tasks needed from you.
- Ability to contribute to discussion, and present your findings.
- Demonstration of professional attitude.

Resource Academics and Clinicians

PAEDIATRICS (PED~474)

General Information

Subject Title	:	Paediatrics
Block Code & Number	:	PED-474
Credit Hour	:	10
Subject Duration	:	36 Weeks (12 weeks / cycle)
Subject Dates	:	31 August 2014 – 06 May 2015
Subject Chair	:	Dr. Hani Temsah

Learning Objectives:

The aim of this document is to develop explicit and comprehensive outcomes for the Paediatrics curriculum in year 5 and to identify competencies that should be demonstrated by medical students on completion of year 5. These competencies specify knowledge, behaviour, skills and attitude that the learners should demonstrate. Unlike Medicine and General Surgery which are taught in years 3 and 5, this is the first time in the whole curriculum for students to be exposed to Paediatrics. As per the National Commission for Academic Accreditation & Assessment (NCAAA) in its recent document entitled, "Program Learning Outcomes Guidelines for Program Development and Review ", issued in August 2011, "Outcomes" were recommended instead of "Learning Objectives" for program development and review. On this basis, the year 5 objectives have been defined as outcomes. This is in harmony with the design made for Surgery and Internal Medicine curricula. The outcomes as per this document cover three main elements that ensure that a graduate (trained to become a doctor) is competent:

First element: What a graduate (doctor) is able to do?
Second element: How does a graduate (doctor) approach patients?
Third element: What professional attitude/behaviour is demonstrated by a graduate (doctor)?

Therefore the learning outcomes can be allocated under these domains:

1. Clinical Skills.
2. Patient investigation and management.
3. Clinical procedures.
4. Knowledge: basic biomedical, bio-psychosocial and clinical sciences.
5. Communication skills
6. Professional attitude, ethics, and legal responsibilities.
7. Disease prevention and health promotion.
8. Self-development, self-directed learning, and preparation to join the medical work force.

The outcomes stated below have been designed with the following principles in mind:

First: Identifying key educational outcomes related to each domain and linking them with the elements discussed earlier.

Second: Defining the outcomes at a level of detail that can be understood by learners and clinical teachers.

Third: Translating these outcomes into specific teaching and learning methodology to be used. The aim is to ensure that the methods used are able to make these outcomes achievable by most students.

1. **Clinical Skills:**

(i) Taking a history from patient, parents and/or career: Students demonstrate the ability to:

- Obtain a complete medical history including key details about pregnancy, delivery, perinatal period, immunization, development, diet, family and social history, and systemic review of body systems. This is unique to paediatrics.
- Take a focused medical history. For example in emergency or acute-care encounter. Important key questions asked in order to gain the essential information needed.
- Keep a balance between the big picture and the essential fine details in their history.
- Address details in a chronological order and state sequence of events (progression of disease/ new diseases) in a meaningful way.
- Present their findings in a systemic and sound way.

(ii) Conduct physical examination of patients: Students demonstrate the ability to:

- Conduct general and system based physical examination of patients of all ages (infant, child, and adolescent) in a standardized and correct order, including the observation and documentation of normal findings..
- Elicit key physical signs correctly and be able to interpret their findings correctly.

- Present their findings in a systemic way and link their findings with findings obtained from history.
- Assess behaviour, neurodevelopment and pubertal staging.

(iii) Generate a diagnosis: Students demonstrate the ability to:

- Use the findings obtained from history and clinical signs to prioritize between their original hypotheses.
- Group their hypotheses into most likely, least likely and those that have been excluded.
- Define their differential diagnosis.
- Provide a justification to support their views/decisions.

2. Patient investigations and patient management:

(i) **Explain the principles behind patient investigations:** Students demonstrate the ability to:

- Justify their views for selecting particular investigations.
- Present an order of investigations needed and how the results of these investigations can help them.
- Obtain informed consent from patients, parents or authorized relative.
- Prepare the patient for investigations to be conducted by explaining to the patient/relatives why the investigation needed, how it will help in patient management, risks/complications, and briefly explain the procedure (such as in endoscopy).
- The lists of laboratory, radiological and other investigations are listed in Appendix 1.

(ii) **Patient management:** Students demonstrate the ability to:

- Outline the goals of patient management plan. This should be clearly outlined in 4-5 points and created in a student-centred way and in a holistic approach. It should be designed in a way that reflects the information obtained from history, clinical examination, investigation results, and the patient's condition (emergency, versus acute, subacute or chronic).
- Discuss options available to address each of the goals stated.
- Share parents and patients (adolescents) in the management plan and explain to them the benefits and the disadvantages of each option (for example, Surgical vs Medical vs Radiotherapy).
- Discuss drug knowledge and demonstrate prescribing skills particularly for drugs commonly prescribed in paediatric conditions, including indications, mechanisms of action, calculation of doses, side-effects, contraindications, drug interactions etc.
- Demonstrate systemic approach in their management and the ability of safe practice.
- Demonstrate skills in managing chronic conditions and the use of appropriate approaches as well as skills in recognizing complications and how to manage such complications at an earlier stage.
- Recognise their limits of competence and seek appropriate help/advice from consultants and members in the health team as needed.
- Handle uncertainty appropriately and realize that in clinical practice patients may present with diseases not necessarily in the typical pattern described in the textbooks.

(iii) **Management of life threatening conditions: S**tudents demonstrate the ability to:

- Manage life threatening conditions and emergency situations at the undergraduate medical level including:

- Respiratory distress
- Foreign body inhalation
- Hypovolaemic shock
- Anaphylactic shock
- Drowning
- Dehydration
- Congestive heart failure
- Cyanosis
- Poisoning (common conditions in paediatrics)
- Status epilepticus
- Neonatal jaundice
- Hypoglycaemia
- Diabetic ketoacidosis
- Altered level of consciousness
- Acute diarrhoea

3. <u>Clinical procedures:</u>

<u>(i)</u> **<u>Clinical procedures:</u>** Students demonstrate the ability to:

- Correctly and efficiently conduct essential clinical procedures including:
    - Venipuncture and venous cannulation.
    - Blood sampling from a central line.
    - Capillary blood sampling.
    - Peripheral arterial blood sampling
    - Placement of an oral airway.
    - Lumber puncture.
    - Cardiopulmonary resuscitation.
    - Placement of nasogastric tube.
    - Injections (intradermal, subcutaneous, intramuscular, and intravenous).
    - Mask ventilation.

- Conduct these procedures on mannequin and on real patients (under clinical teachers' supervision).
- Define basic sciences related to clinical procedures in regard to understanding of anatomy, relationships of structures, and how to conduct a procedure safely.
- Discuss possible complications that may occur as a result of each of these clinical procedures.
- Obtain informed consent from patients or authorized relative.

4. <u>Knowledge in clinical, biosychosocial, and basic biomedical sciences.</u>

(i) <u>Clinical sciences in relation to general paediatrics:</u> Students demonstrate the ability to:

- Acquire basic knowledge of growth and development particularly physical, physiological, and psychological changes from birth through adolescence and link knowledge leaned to clinical practice.
- Discuss the aetiology, epidemiology, pathology, and pathogenesis, natural history, presenting symptoms and signs, laboratory tests and or imaging needed for diagnosis, complications, and prognosis of common paediatric conditions (Appendix 3).
- Discuss intrauterine factors that affect growth of fetus and explain how growth charts are used in the evaluation of height, weight and head circumference.
- Identify abnormalities of growth that warrant further evaluation.
- Identify normal progression in motor milestones in the first year.
- Discuss factors contributing to the development of failure to thrive in infancy.
- Discuss the advantages of breast feeding.
- Discuss immunization as an important part of child health in the community and the recommended schedule of immunization for children.

- Discuss surgical conditions in paediatrics such as inguinal hernia, hydroceles, rectal prolapse, anorectal malformation, umbilical anomalies etc.
- Explain the role of behaviour, biopsychosocial, genetics, and environmental factors in the development of paediatric conditions (e.g., obesity).
- Discuss staging, prognosis, and treatment plan of common malignant conditions in paediatrics.
- Discuss management plan, and identify management option in managing common paediatric conditions.
- Discuss the impact of chronic paediatric conditions and outcomes on patient's life, and his family (e.g., diabetes mellitus, bronchial asthma, epilepsy, congenital heart problems, autism, etc).
- Use knowledge learnt in justifying their views.

(ii) **Clinical sciences in relation to neonatology:** Students demonstrate the ability to:

- Discuss routine care of the newborn and routine clinical examination.
- Discuss maternal disorders causing newborn diseases.
- Discuss common newborn problems such as birth trauma, neonatal life support, neonatal jaundice, small for gestational age, hypoglycaemia in newborn, prematurity, respiratory distress etc.
- Discuss infant of diabetic mother and common problems that may occur (e.g. hypoglycaemia, hypocalcaemia, respiratory distress, macrosomia, etc).
- Discuss symptoms and signs in a newborn that should cause concern (e.g., presence of congenital abnormalities of upper airways, trachea-oesophageal fistula, congenital abnormalities of oesophagus, idiopathic hypertrophic pyloric stenosis, mid gut malformation, intussusception, duodenal atresia, etc).

(iii) **Biomedical sciences:** Students demonstrate the ability to:

- Apply knowledge obtained from anatomy, physiology and pathophysiology to paediatric conditions and paediatric clinical procedures (e.g., anatomical structures related to hernia, hypoxic-ischaemic encephalopathy, surface anatomy, feotal blood circulation and cardiorespiratory physiology, surfactant, fluid balances, and homeostasis, pathophysiology of blood loss, metabolic changes in diarrhea and gastroenteritis, blood products and their use in surgical conditions).
- Apply pathological and microbiological principles related to common paediatric conditions (e.g., neonatal infection, gastroenteritis etc).
- Apply knowledge obtained from pharmacology relevant to paediatrics and safe prescribing of common drugs used in paediatric conditions with emphasis on calculation of doses, mechanisms of action, indications, side-effects, contraindications and possible drug interactions.
- Apply knowledge in relation to effects of teratogenic agents such as alcohol and phenytoin.
- Apply knowledge from genetics to clinical conditions, including chromosomal abnormalities (e.g., Trisomy 21, Turner syndrome, Fragile X syndrome) and genetic disorders (e.g., cystic fibrosis and sickle cell disease).

5. **Communication skills:** Students demonstrate the ability to:

- Develop communication skills that will help in speaking to children, adolescents and their families.
- Establish rapport with the patient family and identify the main concerns of the patient and family.

- Communicate in an effective way with the patients, patients' relatives, careers, their colleagues, supervisors, and all members in the health team. They should be able to demonstrate excellent communication skills with the public and with people from a broad communication orally, and in writing.
- Listen carefully during their communication and demonstrate respect and professional manners during their communication.
- Explain to the patient and family members about the patient's illness using simple and clear language without using medical jargons/medical terms. This necessitates communicating clearly and sensitively (For example, breaking bad news to new parents or the newly diagnosed adolescent with chronic illness or disability).
- Educate patients with the purpose of health promotion and disease prevention.
- Participate effectively as a collaborative member or a member of a team representing his/her team and be able to present the views of the team without personal bias and in a fair way.
- Consider and become aware of cultural, ethnic, and socioeconomic factors in their communication.
- Writing a discharge letter for a referring physician showing the main diagnosis and supportive evidence from history, examination and key investigations as well as current medications and any follow up needed.

6. **Professional attitude, ethics, and legal responsibilities:** Students demonstrate the ability to:

- Ensure personal integrity, accountability, reliability, honesty, and trustworthy in their day-to-day behavior towards others including patients, peers, patients' relatives, supervisors, and members of the community.
- Treat patient's matters and health information as confidential and know the special circumstances where confidentiality my not apply such as police investigations, or endangered health risks.
- Manage their time effectively and make priorities as per their responsibilities.
- Balance demands of family, work and community service as appropriate and be able to recognize their own health needs and seek professional help as needed.

7. **Disease prevention and health promotion:** Students demonstrate the ability to:.

- Identify children at higher risks of developing health problems and work with them through education, and mutual plan to minimize such risks and early detect any changes (e.g., obesity).
- Use health promotion strategies in hospital environment and in the wider community to help in disease prevention.
- Look for options that can improve health and enable early detection of health problems (e.g., screening for glucose-6-phosphate deficiency, screening for sickle cell disease, screening for thalassaemia etc.).

8. Self-development, self-directed learning, and preparation to join the medical work force:.

Students demonstrate the ability to:.

- Define their learning needs, learning resources and strategies to improve their performance and skills.
- Continuously plan, manage and monitor their progress.
- Identify their areas of strengths and areas that need to be developed further and improved.

Appendix 1: A list of laboratory, radiological & other investigations

Laboratory-based investigations:

Students should demonstrate knowledge in relation to laboratory-based laboratory tests ordered in common surgical conditions. They should be able to:

- Explain why they need such investigations.
- Discuss the scientific basis behind a test.
- Discuss the possible outcomes.
- Interpret the results and discuss the sensitivity and specificity of a test.
- Link the results to findings obtained from history and physical examination.
- Use knowledge obtained in refining their hypotheses and decision machining.

These laboratory-based tests include:

- Biochemical tests (e.g., liver function tests, blood urea, creatinine, sodium, potassium, calcium, magnesium electrolytes, urinalysis, serum albumin, globulin, blood glucose level, blood lipids, INR test, bleeding time, arterial blood gases, serum iron studies, thyroid function tests, other hormonal assays, etc).
- Haematology tests (e.g., full blood count, differential counts, blood film, haemoglobin electrophoresis, etc).
- Microbiology tests (e.g., blood culture, urine culture, wound swab culture, stool culture, antibiotic sensitivity tests, special cultures, Gram-stain, Acid-fast stain etc)
- Pathology studies (e.g, surgical pathology and histopathological studies). Cytology studies.

  Important to conduct counseling the family before conducting such tests.
- Immunology studies (e.g., immunoblotting, ELISA, and immunohistochemical staining).

Radiological investigations:

Students should demonstrate knowledge in relation to radiological investigations ordered in common surgical conditions. They should be able to:

- Explain the different modalities of radiological investigations.
- The uses of each modality.
- Justify the appropriateness of their selection for the surgical condition they are studying.
- Discuss the possible outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination.

These investigations include: X-rays, CT scans, MRI studies, ultrasound, nuclear medicine and nuclear imaging etc.

Clinical investigations:

Students should demonstrate knowledge in relation to clinical investigations ordered in common surgical conditions. They should be able to:

- Explain the different tests used, and discuss the uses of each test. .
- Justify the appropriateness of their selection for the surgical condition they are studying.
- Discuss the possible outcomes.
- Interpret the results and link the results to findings obtained from history and physical examination

These tests include:

- Recording and interpreting growth charts (of height, weight and head circumference).
- Urinalysis using standard bedside tests.
- Blood glucose measurement using glucometers.
- Calculating the degree of dehydration and fluid requirement

Appendix 2: Examples for clinical skill topics and required abilities

Topic	Required abilities and skills
Venipuncture	• Selection of needle, syringe (if aim at collection of blood) and preparations (if aim at insertion of cannula for intravenous access). • Sterile technique. • Technique and communication with patient during the procedure. • Completing the procedure successfully, label blood tube correctly (if aim is blood collection), and safe disposal of used needle etc.
Respiratory Care	• How to position & clear the child airway. How to do proper Bag-Mask Ventilation • How to deliver MDI medication with Spacer device • How to deliver nebulized medication

Appendix 3: Cases recommended to read from Case Files Paediatrics Book

- Acute Lymphoblastic Leukemia (Case # 17)
- Acute Otitis Media (Case # 13)
- Adolescent Substance Abuse (Case # 2)
- Allergic Rhinitis (Case # 33)
- Asthma Exacerbation (Case # 20)
- Atopic Dermatitis (Case # 44)
- Attention Deficit/Hyperactivity Disorder (Case #52)
- Bacterial Meningitis (Case # 34)
- Cerebral Palsy (Case # 15)
- Child Abuse (Case # 58)
- Congenital Herpes (Case # 43)
- Diabetic Ketoacidosis (Case # 8)
- Down Syndrome (Case # 3)
- Failure to Thrive (Case # 1)
- Foreign Body Aspiration (Case # 59)
- Growth Hormone Deficiency (Case # 21)
- Idiopathic (Immune) Thrombocytopenic Purpura (Case # 57)
- Immunodeficiency (Case # 4)
- Kawasaki Syndrome (Case # 60)
- Neonatal Hyperbilirubinemia (Case # 19)
- Organophosphate Poisoning (Case # 11)
- Pneumonia (Case # 10)
- Posterior Urethral Valves (Case # 51)
- Rickets (Case # 7)
- Simple Febrile Seizure (Case # 41)
- Sudden Infant Death Syndrome (Case # 23)
- Ventricular Septal Defect (Case # 24)

Lectures & Tutorials Objectives / Learning Outcomes:

By the end of each presentation, the student should be able to achieve the listed Objectives.

Pediatrics History

- How to acquire a complete and accurate pediatric history with consideration of the child's age, development, and the family's cultural, socioeconomic and educational background.
- Describe differences between the pediatric patients' history versus adult patients.

Neonatal Jaundice

- Understand bilirubin synthesis, transport and metabolism and excretion
- Distinguish between physiological and pathological jaundice in the newborn infant
- Know the use and interpretation of investigations for evaluating a jaundiced neonate
- Understands the strategies for prevention and treatment of jaundice

Congenital & Developmental Abnormality of Urinary Tract & UTI

- To know the common congenital & developmental abnormality to the urinary system and how to diagnose them
- Identify infectious and non-infectious causes of urinary complaints.
- List and classify the common pathogens causing urinary tract infections in children.
- Apply basic principles of pharmacology and indications for drugs used in the management of urinary tract infections

Haematuria & Proteinuria

- To know the definition of haematuria and proteinuria
- To know the differential diagnosis of haematuria and proteinuria
- To know the clinical and laboratory approach to hematology and proteinuria
- To know the nephrotic syndrome management

Normal Development & Behaviour

- Highlight the importance of knowing the normal childhood development and behavior for the future medical practice.
- Explain the logic of the evolving developmental and behavioral mile stones in human beings.
- Explain the landmarks of these milestones during the critical periods of development in early childhood.
- Show the technique of exploring these milestones in children.

Common Neonatal Problems

- History and examination of newborn
- Fetal maturation
- Neonatal physiology

- Normal variations in newborn
- Minor trauma in newborn
- Understand the basic metabolism of bilirubin.
- Describe the factors that place a neonate at risk for developing severe hyperbilirubinemia.
- Describe the physiologic mechanisms that result in neonatal jaundice.
- List the common causes of indirect hyperbilirubinemia in the newborn.
- Delineate the criteria for diagnosing each cause.
- Discuss the major clinical features of acute bilirubin encephalopathy and chronic bilirubin encephalopathy (kernicterus).
- List the key elements of the American Academy of Pediatrics guidelines for the management of hyperbilirubinemia.

Childhood Immunization

At the end of the lecture the students will be able to:

- understand the milestones of vaccines
- understand the ultimate goal of vaccination
- know our national vaccination schedule
- know the international vaccination schedule
- the types of immunization
- the adverse effect of vaccination

Common Rheumatic Diseases

At the end of this lecture the students expected to:

1st perform a proper history for a patient with arthralgia / arthritis

2nd to know common pediatric rheumatology disorders such as:

A. Juvenile Idiopathic Arthritis

1. *Definition and classification*
2. *Aetiology*
3. *Epidemiology*
4. *Clinical manifestation*
5. *Differential diagnosis*
6. *Laboratory findings*
7. *Radiology changes*
8. *Treatment*
9. *Course of the disease and prognosis*

B. Systemic Lupus Erythematosus

1. *Definition and classification*
2. *Etiology*
3. *Epidemiology*
4. *Clinical manifestation*
5. *Differential diagnosis*
6. *Laboratory findings*
7. *Treatment*
8. *Course of the disease and prognosis*

C. Juvenile Dermatomyositis

1. *Definition and classification*
2. *Etiology*
3. *Epidemiology*
4. *Clinical manifestation*
5. *Differential diagnosis*
5. *Differential diagnosis*
6. *Laboratory findings*
7. *Radiology changes*
8. *Treatment*
9. *Course of the disease and prognosis*

D. Henoch-Schönlein Purpura

1. *Definition and classification*
2. *Etiology*
3. *Epidemiology*
4. *Clinical manifestation*
5. *Differential diagnosis*
6. *Laboratory findings*
7. *Treatment*
8. *Course of the diseases and prognosis*

E. Kawasaki Disease

1. *Definition and classification*
2. *Etiology*
3. *Epidemiology*
4. *Clinical manifestation*
5. *Differential diagnosis*
6. *Laboratory findings*
7. *Treatment*
8. *Course of the diseases and prognosis*

<u>Common Pediatric Oncology Diseases / Common Pediatric Hematological Disease</u>

1) Immune Thrombocytopenic Purpura (ITP)

- definition and criteria of diagnosis
- history and physical exam findings
- laboratory findings including findings of CBC in ITP
- complications
- treatment

2) PT, PTT tests:

- how and when to utilize each or both of them as screening tests
- know how to interpret their positivity or negativity in pertinent clinical conditions

3) Haemophilia (A) and haemophilia (B) and von Willebrand disease

- diagnosis by history, physical findings and specific laboratory investigation
- differential diagnosis of von Willebrand disease versus haemophilia

4) Acute lymphoblastic laeukaemia (ALL)

- epidemiology including conditions predisposing to (ALL)
- diagnosis: clinical and laboratory investigations
- medical problems of newly diagnosed case of (ALL): recognition and solving
- supportive care in ALL
- side effects of commonly used chemotherapeutic agents

5) Differential diagnosis of:

Neuroblastoma versus Wilms tumor in terms of:
history, physical and important laboratory and radiological investigation

Common Paediatric Allergies

- Epidemiology of common paediatric allergic diseases
- Clinical presentation of allergies e.g. allergic rhinitis, atopic eczema, sinusitis, food allergies
- Age-specific presentations of allergies in infants and children
- Genetic background and environment as risk factor in developing allergies
- Mediators produced by inflammatory cells and their role in manifestations of clinical signs / symptoms of allergies
- IgE mediated allergic conditions
- Role of IgG in allergy
- Cell mediated allergic condition
- Early and late phase allergic response
- Basis of allergic response and role of inflammatory mediators e.g. leukotriene in treatment of allergic conditions
- Role of skin prick test and RAST in the diagnosis of allergy
- Co-existence of allergic rhinitis and asthma
- Common food allergies
- Clinical presentation of food allergy and food intolerance
- Pathophysiology of Type I and Type II food allergy.

Congenital Heart Disease (CHD)

- Incidence of CHD
- Common syndromes associated with CHD
- Classification of CHD
- Understanding the concept of ductus dependent CHD.
- Acyanotic heart diseases including VSD, ASD, AVSD, PDA, Coarctation of Aorta, aortic valve stenosis and pulmonary valve stenosis
- Common cyanotic heart diseases including Tetralogy of Fallot, transposition of the great arteries , total anomalous pulmonary venous return, hypoplastic left heart syndrome, truncus arteriosus and tricuspid atresia

- Acquired heart diseases
- Acquired heart disease in children including acute rheumatic fever, Kawasaki disease, infective endocarditis, myocarditis, cardiomyopathy

Metabolic Disorders

- Understand the types, aetiology and pathophysiology of metabolic disorders/inborn errors of metabolism.
- Understand the role of genetics in metabolic disorders/inborn errors of metabolism.
- Understand the general principles in clinical features and methods of detection of metabolic disorders.
- Understand the clinical presentation of metabolic disorders/inborn errors of metabolism.
- Understand the spectrum of metabolic disorders and the basic principles in management.

Adrenal Disorders

- Understand physiology of adrenal
- Know Causes of adrenal insufficiency
- Know outlines of :
    - Addison Disease
    - Adrenal crisis
    - Congenital adrenal hyperplasia
    - Cushing Syndrome

Thyroid & Bone Mineralization Disorders

- Understand Thyroid Function Test
- Know outlines of :
    - Congenital Hypothyroidism
    - Newborn screening for congenital hypothyroidism
    - Acquired hypothyroidism
    - Hyperthyroidism
    - Causes of goiter

Growth & Puberty Disorders

- Understand physiology of puberty
- Know causes and management approach to precocious puberty
- Identify and investigate children with delayed puberty

Introduction about Adolescent Medicine

1. Promoting adjustment to puberty and adolescence

2. Promoting safety and injury prevention

3. Promoting physical fitness

4. Promoting health dietary habits and preventing eating disorders and obesity

5. Preventing the use of tobacco products, use and abuse of alcohol and other drugs

6. Preventing severe or recurrent depression and suicide

7. Preventing learning problems

8. Preventing infectious diseases.

Child Safety & Protection:

- Describe the epidemiology of childhood injury
  - commonest injuries
  - how to manage them

Child Abuse (Non-Accidental Injuries):

- Physically.
- Psychologically and emotionally
- Neglect Sexually

Paediatric Dermatology

- Describe how to approach a child with skin disease (history & examination)
- Describe the common skin lesions seen by a general pediatrician indicating the features, differential diagnosis and broad lines of management

Childhood Nutritional Disorders

- Describe the nutritional requirements for growth and maintenance of health for infants, children and adolescents.
- Compare breast and formula feeding.
- Emphasis on Breast Feeding benefits & Mother-Baby Bonding
- Explain and demonstrate the ability to use growth charts in the longitudinal evaluation of height, weight and head circumference

- Recognize normal variants of growth, such as familial short stature and constitutional delay.

Respiratory Tract Infections

- To know how common this problem in pediatric medicine.
- How to differentiate between upper and lower respiratory tract infection.
- To know epiglottitis in details (History, physical examination, etiology, differential diagnosis, management).
- To know croup in details (History, physical examination, etiology, differential diagnosis, management).
- To know the pneumonia (bacterial vs viral)

MANAGEMENT OF COMMUNITY ACQUIRED PNEUMONIA (CAP) IN CHILDREN

- Clinical features (How do children with CAP present?)
- Etiology – Causes of CAP (virus, bacterial, atypical organism) does the etiology alter by age.
- Investigations.
- Severity assessment
- Managements
- Complications of CAP pneumonia (pneumatocele necrotizing pneumonia)

PULMONARY TB

- Local Epidemiology vs. international epidemiology.
- Presentations of pulmonary TB in children.
- Diagnosis, investigations, managements.
- How to approach children with positive PPD (child and family)

Genetic & Chromosomal Disorders

- Understand the basics of chromosomal structural and numerical abnormalities including microdeletions.
- Recognize the pattern of Mendelian inheritance.
- Understand the consequences of uniparental inheritance of chromosomes.
- Understand the concept of recurrence risk and its numerical assessment.

Obstructive Lung Diseases

Upon completion of this lecture, the student should be able to:

1. Understand the classification of airway obstruction anatomically and physiologically.
2. Recognize the causes of bronchiectasis and methods of diagnosis.
3. Define asthma
4. List the major pathologic factors responsible for airway obstruction in asthma

5. Discuss precipitating factors including:

    a. Infection
    b. Irritants
    c. Exercise
    d. allergens

6. Describe the clinical findings typical of asthma.
7. Gain familiarity with diagnosis, differential diagnosis (vascular ring, foreign body aspiration, cystic fibrosis, bronchiolitis, etc.)
8. Discuss the role of spirometry, radiography and allergic skin testing in the diagnosis and management of asthma
9. Discuss classifying asthma severity in patients based on day and night time symptoms and lung function- intermittent, mild persistent, moderate persistent, severe persistent.
10. Explain environmental control measures.
11. Discuss the different classes of drugs used in the medical management of asthma and their side effects and their use in step therapy based on asthma severity:
12. Describe current evidence to support the use of the following in the treatment of asthma
    a. Short acting bronchdilators
    b. Long acting bronchodilators
    c. Atropine derivatives (e.g. ipratroprium)
    d. Inhaled steroids
    e. theophylline (methylxanthenes)
    f. cromolyn and nedocromil
    g. leukotriene modifiers
    h. Oral and parental steroids
13. Understand different asthma devices including metered-dose inhaler, spacer devices, dry power inhalers.
14. Define and explain the management of acute asthma exacerbation.
15. Learn the indications for hospitalization of acute exacerbation of asthma.

Serious Pediatric Infections

- Learn special concepts pertinent to children ID.
- Outline a frame work for study of infectious diseases.
- Enumerate examples of serious infections.
- Classify episodes of bacteraemia based on the clinical pattern
- Describe how the child age and other risk factors determine
- etiology of certain infections in pediatrics.
- Appreciate utilization of knowledge of pathogenesis of diseases in therapeutic and preventive measures.

Children with Recurrent Infections

- Definition and prevalence of primary immunodeficiency (PID) diseases
- History taking and physical examination of children with suspected PID
- Examples of common and prototypic PIDs (e.g.: SCID, XLA, CGD, DiGeorge syndrome, WAS, AT, LAD, complement deficiency)
- Diagnostic approach to PIDs
- Therapeutic approach to PIDs

Common Pediatric Infections

- To discuss, show examples and life cases of the common pediatric infectious disease which might they face in their real practicing life
- Differentiate common pediatric infectious disease cases

Liver Diseases

- Understand the anatomy & basic physiology of liver & biliary tree
- Read & interpret the basics of liver function tests
- Recognize the presentation of acute & chronic liver disease
- Know the most common conditions causing neonatal liver diseases & chronic liver diseases in children

Drug Poisoning

- To describe common childhood drug poisoning
- How to manage childhood poisoning
- How to prevent drug poisoning

Neuromuscular Disorders

- Highlight the importance of studying childhood neuromuscular disorders for the future medical practice.
- Explain the logic of diagnosing the underlying causes of the floppy infant syndrome, which is one of the commonest symptom complex in childhood.
- Revise the diagnostic features of childhood neuromuscular disorders with special reference to their epidemiology in Saudi Arabia and other regions with similar ethnic background.
- Highlight the importance of primary prevention of these disorders

TUTORIALS

Approach to children w/ polyuria / polydipsia & disorders of blood sugar control

- Define polyuria
- Know the causes
- Differentiate between the different types of diabetes
- Able to manage a patient presenting with diabetic Ketoacidosis / hypoglycemia
- Able to manage a patient presenting with diabetes insipidus

Shortness of breath (SOB) / Chronic Cough

- Anatomy / physiology - Mechanisms of breathing
- Definition of SOB
- Incidence of SOB
- Pathophysiology causing SOB
- Congenital causes of SOB
- Acquired causes of SOB
- Acute causes
- Chronic causes
- Diagnosis of SOB
- Management of SOB
- To know the epidemiology of cough in children.
- To know the pathophysiology of cough mechanism.
- Definition of acute and chronic cough.
- To know the differential diagnosis of chronic cough in children.
- Definition of prolonged/chronic cough.
- Serious underlying conditions in chronic cough.
- Chronic dry and productive cough.
- Impact of cough on the quality of life of the child and parents.
- Evaluation of child with chronic cough.
- Management of chronic cough.
- Interactive pediatric cases from pediatric Pulmonology common practice (CF, FB, PCP, GERD, asthma, pertussis, TB, etc).

Children with diarrhea / constipation:

- Definition of acute / chronic diarrhea
- Differential diagnosis of infants and children with acute / chronic diarrhea
- Work-up of a child acute / chronic diarrhea or malabsorption.
- Management and prognosis of an infant and child with acute / chronic diarrhea
- Know the differential diagnosis of constipation & how to differentiate between functional constipation & Hirschsprung disease
- Know the pathophysiology, presentation, diagnostic work up & management of Hirschsprung disease

Respiratory Problems in Neonates

- Initiate and encourage group discussion.
- Learn how to read CXR, clinical photos, and pick up abnormal findings.
- Encourage students to make case scenario for the projected slide.
- Make students understand that clinical presentations of respiratory problems in newborns is non-specific for different pathologies and should have wide range of thinking regarding possible underlying disease, which will eventually create the students ability to form a wide range of differential diagnosis.

Approach to children with lymphadenopathy and/or organomegaly:

- List common causes of lymphadenopathy and hepatosplenomegaly
- Outline the key points in history and physical exam
- Describe the relevant physical findings helpful in the differential diagnosis
- Suggest a plan for work-up
- Discuss the management of common etiologies

Failure To Thrive

- Define and describe the meaning of failure to thrive
- Discuss the importance of growth charts and the proper use of growth charts
- Describe causes of failure to thrive
- Stress the importance of non-organic causes of failure to thrive
- How to take history from a patient who is not growing well
- What things to examine and observe on a child who is not growing appropriately
- Investigations and diagnosis of failure to thrive
- Describe in brief the broad lines of management of children not growing well

Approach to children with anemia

- Define normal ranges of hemoglobin and erythrocyte indices at birth and throughout childhood.
- Know how to classify anemias based on red blood cell size.
- Know how to classify anemias based on impaired erythrocyte production, increased erythrocytes destruction, and blood loss.
- Know the clinical and laboratory features and treatment of common causes of childhood anemias.

Common Childhood Emergencies

- Describe common childhood emergencies.
- Describe common respiratory illnesses in the pediatric population.
- Define the different types of child maltreatment
- List the different emergency rashes and their significance
- Recognize normal and abnormal tests tendencies in children.
- Describe the difference between emergency seizures and relation to fever
- Define the risk of fever in the young age group
- Describe the needs and risks of poisoning in the pediatric population

Fluids, electrolytes and acid base balance

- Describe the fluid composition of the body, the body water compartments and the normal movement of fluids and electrolytes between compartments
- Describe clinical signs of dehydration
- Describe the pathophysiology of fluid, electrolyte and acid-base imbalances
- Describe principles of maintenance intravenous fluid
- Describe principles of rehydration
- Emergency management of severe electrolytes imbalance; severe hypo/hypernatremia, severe hypo/hyperkalaemia

Identifying the Sick Child:

- To explain importance of early recognition of respiratory failure and shock.
- Identify which aspects of the physical exam should be included in the rapid assessment of the critically ill child.
- Describe the clinical features of the different types of shock.
- Discuss the early recognition of life threatening conditions and how to initiate management.

GUIDELINES FOR CLERKING

Purpose:

The purpose of the case study is mainly to train the student to take a thorough history and perform a comprehensive physical examination. In addition the student, through this exercise, writes down his/her thoughts about the patient's problem(s) and formulates his/her plan of action to solve it. It helps the students think critically in a problem solving manner. The student can look at the patient's file (chart) and should discuss the case with the treating team as well.

History Taking:

Starting with the patient's demographic data and presenting complaint and its detailed history, the student takes a full history as he is taught to do so and according to the guidelines.

Physical examination:

It is important that the student examines the patient thoroughly as he/she has learned it, and according to the acceptable medical standard. Often times a thoroughly performed physical exam can discover some findings that may or may not be related to the patient's problem. Accordingly, a complete physical examination must be performed or at least attempted. It is wise, however, to do a problem oriented physical examination more in depth to better delineate the patient's problem.

Summary:

A brief summary of the history and physical examination is advisable here.

Please note that duplicating / copying the clerking from other students is **STRICTLY PROHIBITED**, random samples from the clerking will be compared and strict punishment will be given for duplication or cheating and will be forbidden from entering the examinations!

Problem List:

All the problems that the patient has as obtained by the history and the physical examination need to be listed down at this stage. It is important to put down the most important problems (e.g. most serious, most urgent, or most agonizing to the patient) at the top of the list.

All problems that the patient has especially those that affect his well-being whether organic or psychosocial need to be listed own.

Provisional diagnosis and differential diagnosis:

The provisional diagnosis is the one that best explains the patients' symptoms and signs and encompasses as many of the patients problems as possible.

The differential diagnoses are alternative possibilities that fit the symptoms and signs but to a lesser degree.

Each diagnosis, whether the prime one or the alternatives (differential) ones, needs to have the supportive evidence and negating points mentioned.

Management Plan:

Management includes investigations and treatment.

Investigations:

The student must suggest the investigations required whether hematological, other body fluids or tissues or radiological. Each investigation suggested must be accompanied by sound reasoning's as to why it should be done. Investigations need to be prioritized.

Other services:

The help of other services or sub-specialties can be mentioned if needed.

Treatment:

Base on the aforementioned information and findings the student is expected to write down his plan of treatment with sound rationalization.

At this stage the student is allowed to look at the patient's file. The student is expected to compare his findings, thoughts, and plans with those in the file and to give his comments.

Follow-up:

On a daily basis the student has to report on the patient's condition as well as any plans after discussion with the team, following the patient. Daily progress notes should be written using the SOAP format.

The SOAP format should be used as follows:

- **S (Subjective):** *Changes in the patient status, in the patient's or his guardian's words.*
- **O (Objective):** *Vital signs, examination of concerned system(s), and new investigations results.*
- **A (Assessment):** *Your interpretations and evaluation of the patient condition based on the subjective and objective data.*
- **P (Plan):** *Your decisions based on the assessment (e.g. order a new investigation, add or stop a medication).*

Prognosis and future plan:

The student has to give his/her opinion regarding the prognosis. The student, as well, must write down the future plan for the patient (irrespective of whether the patient has been discharged or not).

General Comments:

The student is required to write down a brief comment on the overall management care and plans for the patient.

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