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AC's INTRODUCTION TO CLINICAL MEDICINE

For MBBS I and II



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JAYPEE

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CHAPTER

4

Overview of Clinical Subjects

Anup Chalise, Sunil Kumar Sharma

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INTRODUCTION

There is very much less appreciation for the **Basic Science** subjects, increasingly so in the past few years. Although the reason is uncertain, it is highly likely due to the lack of awareness about the fact that clinical practice is fully based on the knowledge of these basic sciences.

In the first two years of your medical study, you deal with 7 different subjects of basic sciences (*anatomy, physiology, biochemistry, pathology, microbiology, pharmacology, and community medicine and behavioral sciences*). In these two years, you are mainly involved in learning the core concepts of medicine, from normal human anatomy and function to various pathological processes and their effects in the body. It is this very knowledge that lays your foundation for your whole life, whichever field you may choose to work on in medicine or surgery.

Clinical Medicine

It is very much related to the courses of the basic science subjects. at times, you may feel that there is no use of studying the basic science subjects, as there is little application of this study in the future years to come in practice.

However, the stronger your grasp of the basic science subjects, the better your clinical reasoning skills will be. Thus, you will be much more capable of making the right decisions at the required time.

Clinical Surgery

It is much like clinical medicine. It primarily deals with lumps and bumps, i.e. any abnormal mass present in the patient. For surgery, the basic requirement is to focus on the anatomy of the patient, as a competent surgeon requires a thorough knowledge of human anatomy to know what she/he is cutting and what structures she/he is passing when in the operation theater. It also deals with physiology, to restore the homeostasis as quickly and as efficiently as possible after a patient has undergone surgery, be major or minor.

Medicine and surgery encompass almost all of clinical practice as other fields of medicine include both, for example in pediatrics, obstetrics and gynecology, otorhinolaryngol-

ogy (ENT) and ophthalmology, you will be dealing with diseases and their medical and surgical management, both.

HOW DO YOU START?

The study to become a competent **general practitioner** (GP) or a Surgeon begins on the first day when you enter your medical school. The usual practice, in most colleges, is to teach you how to study each subject in the upcoming lectures and during the time of your course. The main focus of almost every teacher will be on **repetition**.

It is true that repetition will help you remember, but only to a limited extent. Some are gifted with a strong memory, whereas some have to work extra hard, repeat extensively, before being able to reproduce the details of a small topic. You may be familiar with many ways, by which you tried to boost your memory power. Some books tell you that periodic repetition will help you retain more, while others will tell you otherwise. But, all of these techniques are subjective to the individual practicing them. Discussion of such techniques is out of the scope of this book, but a few good books are referred to at the end of this chapter.

Studying Medicine[1]

The key point to transiting between these two realms of medicine is to know that patients are rarely presented to the clinic with a clear-cut diagnosis. Any pathology that is read in a book will definitely be to the point and aimed at providing information to the reader. Now all you need to do is free your mind and think outside the textbook, applying it to real patient scenarios. Try the following:

1. Start with the **definition**
   a. Know what you are studying.
   b. Know what the name of the disease implies.
   c. The definition alone gives a definitive clue to what you will be dealing under that particular topic.
2. Study the **causes and pathogenesis**
   a. Know the various causes and risk factors of a disease.
   b. Address these questions.
   c. Is the disease process multifactorial?
   d. Can any of these factors be modified to prevent this disease?
3. Know the **clinical features**
   a. Learn the *commonly presenting diseases and their clinical features* by heart, e.g. tuberculosis (chronic cough), diabetes mellitus (polyphagia, polydipsia and polyuria), etc.
   b. Always compares different diseases with similar presenting features and learn the ways in which they can be differentiated from one another.
   c. Know what symptoms the patient will complain of, i.e. commonly presenting problems.
   d. More importantly, know the clinical signs that separate various disease etiologies. For example:
      i. Low grade fever: Most likely viral infection or stress.
      ii. High grade fever: Most likely bacterial infection.
      iii. ↑ Neutrophils: Likely bacterial infection.
      iv. ↑ Eosinophils: Parasitic or allergic conditions.
4. Learn the **complications**
   a. These are very much important clinically.
   b. The primary aim of every physician is to treat the disease before complications start to arise.

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5. Briefly view the **investigations**
   a. Know the commonly used investigations, according to systems, if not according to disease or symptoms
   b. These help confirm the disease that you think the patient has
6. Know the **best treatment option** and why it is used
   a. There are two types of treatment: supportive and specific.
   b. Learn the specific treatments, dosages are not required.
   c. Know the route of administration of various commonly used drugs like salbutamol, epinephrine, tetanus toxoid, etc.
7. **Bedside learning**
   a. This is the best form of learning for a medical student.
   b. However, this is not always possible, as many cases are hard to find.
   c. So, whenever you get the chance, go visit a patient.
   d. Come back from the ward and study about the patient, comparing your notes with what you found in the ward.
   e. You will certainly retain more than you would by just reading a book.

In addition, there are several fundamental questions that facilitate clinical thinking.

For example:
1. What is the most likely diagnosis?
2. What should be your next step?
3. What is the most likely mechanism?
4. What are the risk factors for this condition?
5. What are the possible complications?
6. What is the best therapy?
7. How would you confirm the diagnosis?

Reading with the purpose of answering the seven fundamental clinical questions improves retention of information and facilitates the application of 'book knowledge' to 'clinical knowledge'.

REFERENCE

1. Toy, et al. Case Files Series. McGraw Hill.

Good Reads for Basic Sciences (For MBBS 1st and 2nd year)	
This book has been closely integrated with facts from the books mentioned below. Permission for copyright was sought for where required as per the International Copyright law. All the discussions under 'Case Files' are in reference to the books listed below	
Anatomy	Gray's Anatomy for Students
	Clinical Anatomy: Applied Anatomy for Students and Junior Doctors
Do not leave out the clinical correlate box from Gray's.	
Physiology/ Biochemistry	Textbook of Medical Physiology: A South Asian Edition (Guyton and Hall)
	Ganong's Review of Medical Physiology (Lange Basic Science)
	Biochemistry (Lippincott Illustrated Reviews Series)
	Physiology (Lippincott Illustrated Reviews Series)
Remember that Physiology becomes your BASE for understanding all pathological process occurring in the body. This is what Medicine and Surgery aim for, restoring the normal physiology of a diseased or ill patient	

Contd...

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Contd...

Good Reads for Basic Sciences (For MBBS 1st and 2nd year)	
Pathology	Robbins and Cotran Pathologic Basis of Disease (Robbins Pathology)
	Rubin's Pathology: Clinicopathologic Foundations of Medicine
	Textbook of Pathology
The recommended text is Robbins, but Rubin's is also a good book for Undergraduates. Pathology becomes the basis of all disease process that you see in the clinic. So read the clinical features properly	
Microbiology	Medical Microbiology (Greenwood[2] Medical Microbiology)
	Medical Microbiology
	Review of Medical Microbiology and Immunology (Lange Medical Books)
It is said that Greenwood's is better for bacteriology and Jawetz for virology. Levinson provides a comprehensive review of all microbiology topics	
Pharmacology	Katzung and Trevor's Pharmacology Examination and Board Review (Katzung and Trevor's Pharmacology Examination and Board Review)
	Essentials of Medical Pharmacology
	Pharmacology (Lippincott Illustrated Reviews Series)
Katzung is the standard reference book. The review book provides short and succinct review of all topics in the textbook. LIR is a good book to read, for Undergraduates, as it provides, in brief, all the topics with good and reasonable amount of explanation of each topic. KD Tripathi's is another good and well-renowned book for pharmacology	
Clinical Books	Macleod's Clinical Examination
	Bates' Guide to Physical Examination and History-Taking
	Hutchison's Clinical Methods
	Oxford Handbook of Clinical Medicine (Oxford Handbooks)
	Oxford Handbook of Clinical Surgery
	Mechanisms of Clinical Signs
	Clinical Examination
This is purely the author's and editor's opinion. You should choose your own books and make the best use of all of them, and learn to integrate the contents of one subject with another as early on as possible	
Other	The Harvard Medical School Guide to Achieving Optimal Memory. Dr Golem: How to Think about Medicine

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For MBBS I and II

Initially the book was planned as a compilation of study notes. But it has been written, edited, and rewritten till the final touches made it comply with the Kathmandu University Curriculum for Paper IX of Basic Sciences extensively.

The Case Files at the end of the chapters of Section C will help the reader get some clinical exposure from the book itself, before being introduced to a patient in the clinic.

Salient Features

- Presents a comprehensive contents to cover the syllabus
- Includes boxes to highlight important points of the text.
- Explains various procedures with the help of high-quality line diagrams
- Also includes chapters on Common Diagnostic Tests and Basics of the Electrocardiogram.
- Provides 275 Multiple Choice Questions with solutions, previous years' papers with solutions and hints, and probable questions that cover the entire syllabus.

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ISBN 978-93-5250-031-4