Rotation Manual
Clinical Pharmacy

**** 5th year ****
2020-2021

Introduction

Clinical pharmacy is defined as “the optimal use of the pharmacist’s judgment and pharmacological and biomedical knowledge for the purpose of improving the efficacy, safety, economy and accuracy according to which drugs are to be used in the treatment of patients” (WALTON-KENTUCKY University 1961).

This definition then summarizes the need to introduce the pharmacist into the medical team in hospital care services. This is done by a system of rotations in the different departments.

Rotation goals

The purpose of rotations in clinical departments is to provide students with basic knowledge about diseases and various medical problems encountered with patients.
In these departments, the clinician provides essential therapeutic care to patients. At the same time, the pharmacist intervenes to ensure the follow-up and application of this care. In other words, the pharmacist must use his therapeutic knowledge, *i.e.* in semio-pathology, clinical biochemistry, pharmacology, pharmacokinetics, etc. to develop therapeutic surveillance techniques. It must then collect data on the patient’s drug history, daily follow-up during hospitalization, provide the necessary information on drug use (pharmacokinetic properties, dose, dosage regimen, drug interaction, etc.) and provide the necessary advice to patients and the healthcare team.
The importance of these rotations lies in the fact that it exposes the pharmacist to work within a team and being a necessary and integral part of it.

Rotational services

Three rotation departments are required:

- Department of paediatrics
- Department of cardiology
- Department of internal medicine

Length of internship and attendance

1. The internship starts on the first Monday of March and ends at the end of June.
2. It takes place from Monday to Thursday and from 8 a.m. to 2 p.m.
3. Students must perform 24 hours a week.
4. Fridays are reserved for any event at the faculty.
5. Absences should be avoided during the week. Otherwise, they should be compensate on

Saturdays. In case of impediment or absence from the internship, notify the administrative preceptor responsible at the hospital and the head of the clinical pharmacy department as soon as possible.

Recommended references

1. AHA, ADA, IDSA, Lebanese Society of Infectious Disease and Clinical Microbiology, etc.
2. Clinical Pharmacy and therapeutics - second edition
3. Applied therapeutics - therapeutics - last edition.
4. Clinical drug data - last edition.
5. Applied pharmacokinetics - last edition.
6. The pharmacological basis of therapeutics.
7. Pharmacotherapy - last edition.

Student activities

Each student must complete a number of fact sheets (patient monitoring and evaluation sheet) for each rotation or unit of care. These sheets allow for a better evaluation and organization of the work during the clinical internship of the fifth year of pharmacy.

I. Daily activities

Morning round

a) The student must participate in physicians' rounds by asking questions, suggesting appropriate advice to the therapy in question, collecting notes for any new admissions or problems encountered in the service.
b) The time and duration of each round varies depending on the activity of each service. This is very important and the student has to participate to it every day.

II. Weekly activities

Complete **3-4 clinical cases per month.** The student must choose a simple, uncomplicated and well-defined case from the following list:

- *Cardiology: hypertension, stable and unstable angina, myocardial infarction (STEMI, NSTEMI), heart failure, CVA.*
- *Endocrinology: diabetes and complications, dyslipidemia.*
- *Gastrology: peptic ulcer, gastroesophageal reflux disease, cirrhosis and complications, pancreatitis, hemorrhagic retocololitis and Crohn's disease.*

- Nephrology: acute and chronic kidney failure.
- Infection (adult and paediatrics): meningitis, otitis, gastroenteritis, pneumonia, urinary tract infection, COPD, asthma.
- Iatrogenesis.

Each case study should contain:

a. The medication history

- Interview each patient after admission to obtain the necessary information on the history of his medications.
- Know how to ask the right questions for the collection of information concerning particularly the indication for which the drugs are prescribed, the dosage regimen and/or the route of administration of the drugs, any drug allergy, etc.

b. Patient monitoring

- Patient name, age, gender, height and weight
- Hospital admission date and date of discharge
- Admission chief complaints
- History of the disease
- Medical and surgical history
- Drug history and/or allergy
- Physical examination
- Impression / Plan / Diagnosis
- Lab results
- Progress notes
- Treatments adopted at the hospital (name of medication, start of administration, dosage regimen, intervals and route of administration, date of drug discontinuation)
- Evaluation of therapy: evaluation of drug choice, indication, mechanism of action, major side effects, parameters to monitor and precautions to be taken).

c. Discharge sheet

- Advise and educate the patient on his medication before his discharge, by communicating to him orally and in writing the necessary information.
- Advise the patient on new prescribed drugs in particular:
    - the importance and place of the drug for its treatment
    - name, dose and route of administration of the drug
    - precautions and possible side effects.
    - insist on adherence and respect for the intake schedules.

III. Other activities

Drug information

- The student must answer all questions about medications from the medical team, patient or preceptor.
- Support his answers with bibliographical references.
- Ask the right questions.
- Complete 2 fact sheets on new drugs.

IV. Special activities

a. Inside the service

- Depending on the need for the service. Perform at least one activity on a rotational basis.
- Participate in meetings and conferences conducted in the department by performing research presented orally to the medical staff.
- The chosen subject to present must be approved in advance by the preceptor.

b. Clinical case study / Oral and written presentation

Preparation

- Only one clinical case must be typed and presented orally to the faculty on a specific date.
- Do not exceed 15 pages typed with a double interline space. Mention the title of the study on each page. Avoid errors and present the study properly.
- The student must provide the reference lists used in his case study.
- The study report must be approved by the preceptor prior to its presentation.

Case presentation

The case presentation should contain the following parts.

- *Patient identification*
  - Initials, age, gender, date of admission, weight, height, etc.

- *Chief complaints*

- *History*
  - Medical history
  - Drug history

- *Physical and general examination*
  - Symptoms at admission
  - Results of radiological examinations (*e.g.*, ECG, echo, etc.)

- *Plan, impressions and diagnosis*

- *Clinical and therapeutic follow-up*
  - Laboratory tests (list of abnormal values only)
  - Summarize the patient's treatment by indicating the pharmacotherapeutic concepts of significant interest for the patient, with the patient's progress according to the treatment.
  - Plasma drug concentration and impact on pharmacotherapeutic response in patients

- *Patient discharge*
  - Advice about medications
  - Final diagnosis
  - Patient orientation (total recovery, home discharge or home hospitalization, etc.)

- *Your assessment based on the literature*
  - General information related directly to the patient's illness
  - Arguments justifying the adequacy between prescribed treatment and diagnosis made by the physician (pharmacokinetics, dose, interval, dosage form, side effects, drug interactions and contraindications, alternative treatments and therapeutic follow-up)
  - Patient's prognosis at the time of discharge according to the physician
  - Risk of immediate re-hospitalization in case of non-adherence.

PATIENT MONITORING AND EVALUATION SHEET
(N°__)

Date of admission:…….…….....
Patient ID:……..…..Age :……..…….Gender:…….....
Height……..….Body weight…….BMI:……
Chieh complaint(s):…….…….……..
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List of medication taken by the patient prior to hospitalization

NAME	DOSE	ROUTE OF ADMINISTRATION

Medicines taken as self-medication? ☐ yes ☐ no Specify:

Allergy? ☐ yes ☐ no

Do you smoke cigarettes? ☐ yes ☐ no

Do you drink alcohol? ☐ yes ☐ no

Medical, surgical and drug history:

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History of the disease:

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Laboratory tests:

Date										
Serum creatinine										
BUN										
Creatinine clearance										
Na^+										
K^+										
Cl^-										
CO_2										
Glu (FBS)										
HbA1c										
Albumin										
LDH										
SGOT/ASAT										
SGPT/ALAT										
Total cholest.										
HDL										
LDL										
TG										
RBC										
Hemoglobin										
Hematocrit										
Platelets										
WBC										
Neutroph.										
Lymphocytes										
Monocytes										
Eosinophils										
CRP										
Others:										

Physical examination:

Date									
BP									
T°C									
HR									
RR									

Impression / Plan / Diagnosis :

I : ……..……

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P : ……..……

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D : ……

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Treatment adopted in hospital (drug therapy):

☛Draw the table of the drugs with their dose, their starting and discontinuation dates.

Evaluation of therapy

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DISCHARGE SHEET AND ADVICE

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INFORMATION SHEET
‘‘NEW MEDICATIONS’’

Student: ……..…… Date…….……

Drug name: ……..……

INDICATION:

DOSAGE FORMS AND STRENGTHS:

SIDE EFFECTS:

ADVANTAGES:

DISADVANTAGES:

COST / BENEFIT: