



Rotation Manual

** Pharm.D. in hospital pharmacy **

2020-2021

1. Presentation

The hospital pharmacy internship aims to complete the training on a practical level and provides to students a professional experience in the institutional setting. The internship lasts **8 months** in the selected pharmacy department. It is the student's responsibility to find an internship service that suits his interests and a hospital pharmacist supervisor willing to welcome him. For the internship **6 hours a day** are required **from Monday to Thursday**.

2. Internship coordinator

The coordinator's responsibilities are to:

- ✓ Ensure student distribution at the training sites
- ✓ Answer questions about the internship
- ✓ Help solving problems that may be encountered
- ✓ Be the link between the student and the Faculty of Pharmacy
- ✓ Make progress towards achieving the objectives of the internship
- ✓ Collect the internship books at the end of the rotation

Training coordinator's contact information

Pr. Salam ZEIN; salam.zein@ul.edu.lb; Tel: 03.513.174

3. Rules to observe during the training

- ✓ Have proper dress and a badge.
- ✓ Have exemplary behavior and attitudes in the workplace, especially towards colleagues, professionals and patients.
- ✓ Respect work schedules.
- ✓ Respect the rules of profession ethics, including the confidentiality of the collected information.
- ✓ Keep your internship book up to date.

4. Presentation of the internship manual

This manual is a work guide for the student and an educational support. This manual is intended to guide the student in his learning throughout the training.

It is recommended that the student and the supervisor take notice of this book at the beginning of the internship and work together to achieve the defined objectives.

The student must provide:

- ✓ An internship report, in March, with an oral presentation for a mid-training evaluation (see how to write the internship report: sections A-J)

- ✓ A final report at the end of the internship (see the internship report: sections J-O)

5. Hospital internship goals

- ✓ Familiarization with the general organization of the pharmacy
 - Identification of the local and internal layout
 - Employees' roles and tasks
 - Relationships with the hospital's administrative departments
- ✓ Get an overview of inventory management
 - Organization of stocks
 - Receipt and control of wares
 - Locals, temperature, humidity...
 - Management of expiry dates
 - Set thresholds (quantity to order)
 - Sold out management
 - Inventory
 - Overview on the pharmacy computer system
- ✓ Control drug circuit: order, storage, dispensation, nursing service, patient, cold chain
- ✓ Know how to buy drug at the pharmacy
 - Direct purchase from pharmaceutical companies
 - Negotiated purchases or offers
 - Wholesalers or others
- ✓ Participation in the dispensation of medicines
 - Dispensation methods (service/operating room/night pharmacy)
 - Preparation and labeling
 - Application of narcotic and psychotropic legislation
- ✓ Familiarization with the concept of "patient care", pharmaceutical care
 - Prescription analysis and validation
 - Documentation of adverse reactions and medication errors
 - Therapeutic monitoring of toxic and narrow therapeutic margin drugs
 - Reconciliation of medicines
- ✓ Get an overview of the pharmacist's role on hospital committees
 - Drug committee; hospital formulary
 - CLIN, restricted antibiotic, antibiotic prophylaxis

- Relationship with the Quality Assurance Committee
- ✓ Be able to provide information about different therapies for pharmacy staff and in response to information requested by other departments

6. Criteria required for a University Hospital pharmacy

- ✓ Available pharmacist (at least one full-time pharmacist)
- ✓ Individualized dispensation of medicines at the pharmacy
- ✓ Available source of information, updated bookstore, Internet°...
- ✓ Active pharmacist's participation in the hospital committees
- ✓ Regular contact between the pharmaceutical department and the other hospital departments
- ✓ Criteria not mandatory but preferable:
 - Presence of parenteral preparations (nutrition, oncology) department
 - Patient profile record system

INTERNSHIP REPORT

A. Presentation of the hospital pharmacy

- ✓ Chief pharmacist (name, university, and date of graduation in pharmacy)
- ✓ Number of pharmacists, technicians (*job description, tasks of pharmacy employees, Quality Control procedure*)
- ✓ Internal pharmacy organization
- ✓ Number of hospital beds
- ✓ Pharmacy opening hours, alternatives

B. Inventory management

- ✓ Description
 - Locals (regular control of the temperature, humidity...)
 - Method of classifying drugs
 - List of medicines in the fridge (examples)
 - Locked narcotics cabinet
- ✓ Participation in the reception and control of the drugs
- ✓ Expiry date follow-up
- ✓ Setting of thresholds (quantity to order)
- ✓ Stock-outs management (list possible solutions)
- ✓ Get an idea about the computer system used

C. Organigram of the drug circuit in the hospital

- ✓ Detailed circuit for each step
- ✓ Cold chain

D. Dispensation of medicines

- ✓ Describe the different ways for drug dispensation
 - Unitary service provision
 - Operating room
 - Night pharmacy
 - Narcotics and neuroleptics
 - Emergency trolley
 - Others
- ✓ Describe method of labeling drugs

E. Description of functions performed at the pharmacy

- ✓ Cytotoxic preparations: cytotoxic preparation unit; pharmacist's role and responsibility
- ✓ Preparations for enteral and parenteral nutrition

F. Discussion with the chief pharmacist about his role in the committees

- ✓ Drugs committee
- ✓ Antibiotics committee (CLIN)
- ✓ Pain committee
- ✓ Others

G. Overview on the hospital formulary

- ✓ List of available antidotes
- ✓ List of drugs requiring order renewal (morphine derivatives, anticoagulants, others)
- ✓ Protocols for high-alert drugs

H. List of antibiotics under restriction

- ✓ The role of the pharmacy
- ✓ Dispensation and automatic order stop

I. Analysis and validation of nominative prescriptions

- ✓ Two prescriptions (ICU-CCU departments) per month with at least 4 drugs each
- ✓ Two prescriptions (Internal Medicine, Pediatrics) per month with at least 4 drugs each
- ✓ See appendix

J. Presentation a new drug

- ✓ Presentation a new drug or medication reserved for hospital use each month, i.e. six new drugs during the internship period.

K. Collection of adverse reactions and medication errors

- ✓ Adverse reactions sheets sent to the pharmacy

- ✓ Medication errors sheets sent to the pharmacy
- ✓ Discuss with the chief pharmacist the methods to control these effects and errors

L. Therapeutic monitoring

- ✓ Therapeutic monitoring of plasma concentrations for narrow therapeutic index drugs (digoxin, some antibiotics: vancomycin...)
 - Give a sampling protocol and explain the interest

M. Participation in the educational role of the hospital pharmacist

- ✓ Provide practical information for pharmacy staff
- ✓ Responding to the nurses' or physicians' questions
- ✓ Give at least two participations in each case

N. Drug reconciliation

- ✓ Give 4 reconciliation forms at admission (see appendix)

O. Discussion

- ✓ Discuss with the chief pharmacist the main objectives of the current year work and the progress.

PRESCRIPTION VALIDATION

Patient ID.....

Age:years Gender: Admission date:

Weight:kg Height: m BMI: kg/m²

Major complaint(s):

Current disease history:

Medical and drug history:

Disease	Drug	Dosage

Laboratory data:

Date										
Serum creatinine										
BUN										
CrCl										
Na ⁺										
K ⁺										
Cl ⁻										
CO ₂										
Glu (FBS)										
HbA1c										
Albumin										
SGOT/ASAT										
SGPT/ALT										
Bilirubin										
Total cholesterol										
HDL										
LDL										
TG										
RBC										
Hb										
Ht										
Plt										
WBC										
Neutrophils										
Lymphocytes										
Monocytes/eosinophils										
CRP										
Remarks:										

Physical examination:

Date									
BP									
T°C									
RR									
HR									

Results of radiological examinations (ECG, echography,...)

Impression / Plan / Diagnosis:

I:

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P:

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D:

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Treatment (i.e. drug therapy) adopted at the hospital:

Drugs	Date									

Evaluation of therapy: choice of medication, dosage regimen, interaction, side effects, contraindications, monitoring of parameters, etc.

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Discharge prescription:

Medicines	Dosage regimen

Sheet for reconciliation at admission

	Home medication				Status	Hospital medication at admission				I/UI	Classification of adverse drug effect
	Med	D	RoA	F		Med	D	RoA	F		
1											
2											
3											
4											
5											
6											
7											
8											
....											

- ✓ Med, medication; D, dose; RoA, route of administration; F, frequency
- ✓ Status definition: O, omitted; A, added; S, suspended; P, pursued; M, modified; St, stopped.
- ✓ I, intentional ; UI, unintentional
- ✓ Classification:
 - *Fatal*: patient died due to the error.
 - *Life-threatening*: patient transferred to ICU, respiratory failure requiring intubation, mental status change, patient falls and gets intracranial hemorrhage, tongue swelling/anaphylactic shock due to medication.
 - *Serious*: gastrointestinal bleeding, altered mental status/excessive sedation due to medication, increased creatininemia due to medication, decrease in blood pressure, patient feels lightheaded, allergic reaction, shaking chills/fever. Any event identified that requires a change in therapy.
 - *Significant*: rash, diarrhea due to antibiotics, thrombocytopenia due to histamine type 2 receptor antagonists. Any significant event that is identified by the patient but not requiring a change in therapy.
 - *Absent*

Documentation of admission data

1. Medication list obtained within 24 hours of admission?
2. Number of home medications listed on admission formulary:
 - a) Number of prescribed medications:
 - b) Number of over-the-counter medications:
 - c) Number of herbal supplements:
 - d) Number of supplements:
3. Number of home medications pursued:
4. Number of home medications modified:
 - Modification in *brand name*:
 - Modification in *dose*:
 - Modification in *frequency*:
 - Modification in *route of administration*:
 - Modification in *generic name of same therapeutic class*:
5. Number of home medication omitted:
6. Number of home medications added:
7. Number of home medications duplicated:
8. Number of home medications suspended:
9. Number of medications stopped:
10. Number of discrepancies:
 - intentional:
 - unintentional: