

## Preamble

The manual for "Advance Pharmacy Practice Experience" has been compiled by the Department of Pharmacy Practice, to guide the students for achievement of their objectives during the clinical rotations.

In compilation of the current manual, the clerkship/internship programs/manuals of the following renowned Schools of Pharmacy of USA and KSA were thoroughly reviewed, and relevant material was adopted, keeping in view the needs and background knowledge of our Pharm D students and facilities available in our region:

- College of Pharmacy, King Saud University, Riyadh
- School of Pharmacy, University of California, San Francisco, USA
- School of Pharmacy, Texas Tech University, USA
- School of Pharmacy, Campbell University USA
- School of Pharmacy Creighton University, USA
- ACPE standards as adopted by School of pharmacy, University of Florida, USA
- College of Pharmacy, University of Kentucky, USA

The initial manuscript was reviewed and approved by the external reviewers from USA: Prof. Nelson Arthur (Dean, School of Pharmacy Texas tech university USA) and Prof. Georg Spratto (Dean Emeritus School of Pharmacy West Virginia University, USA). We are extremely thankful to them for their experienced, skilled and valuable input.

I appreciate the efforts of Dr. Afzal Haq Asif, Associate Professor of Therapeutics & Coordinator of Clinical Training in compiling this manual, whose dedication and hard work made it possible, and also acknowledge the positive criticism, input and suggestions from all the faculty members of the college, especially Dr Ashraf Khalil, Dr. Sherif Mansour, Dr Sibghatullah Sangi, Dr Tasleem, Dr Tanveer and Dr Mueen, Dr. Harsha and Dr. Mahesh who reviewed the initial manuscripts and provided us with their valuable suggestions. Special thanks are also due to Dr Hafez, for his help and cooperation.

One thing to mention is that the term clerkship has now been worldwide replace by "Advance Pharmacy Practice Experience", however in the text you may still find "Clerkship" ; this is just to avoid confusion for the students.

May Allah accept our efforts and guide us to the right path for the service of humanity in general and our people and country in special. Aamin

Dr.Ibrahim A. Al-Haider PhD

*Dean*

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King Faisal University, Al-Ahsa

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## 1.GENERAL RULES OF CONDUCT

### **Students' Placement for APPE training sites and Registration:**

- The students' placement on available slots will be furnished by the Committee appointed by the Dean, College of Clinical Pharmacy
- All the placements will be entirely made on merit. A merit list of all the students will be prepared by the committee which will base on:
  - GPA of the student: 10
  - Reports from the previous preceptor: 5
  - Feed back from the faculty on prescribed proforma: 5
- Any case of mutual exchange for training slot will need prior approval by the Committee.
- Any matter of conflict or disagreement will be referred to college academic council, the decision of which will be final
- The student will register themselves for the Clerkship Semesters Courses: 2003531,2003611, 2003621 with the Deanship of Registration, well in time, after consultation with the Head of Academic Committee, College of Clinical Pharmacy

### **Attendance:**

- Students are required to attend all activities in all the rotations as outlined in the manual.
- Respective log book proforma should be filled-in date wise and got signed by the preceptor for onward submission to the college after completion of each rotation.
- Additional activities which require attendance may be added by the rotation preceptors.
- Leave applications must be approved by the preceptor prior to the requested dates and will be forwarded to the college after approval.
- The student is responsible for making over the appropriate work/assignment left, for each absence.
- The student will maintain by himself a **rotation activity log** based on his daily activities, duly signed by the preceptor on each day of specific activity (*please refer to the Section on Guidelines*).
- **The results of the clerkship semesters will be submitted to the Deanship of registration only after the college will receive the evaluation by the preceptor and rotation activity log for each rotation**
- Unexcused absences will not be permitted. In the event of any absences the student will be assigned a grade of Incomplete (IC) until all rotations have been completed and all absence work in a rotation is made up .

### **Communication and Attitude:**

- The student is responsible for developing good communication skills with all the health professionals as well as with the patients, as learners
- Students are expected to display respect and courtesy to the preceptor. They should not publicly question the advice or directions of the preceptor and should discuss any disagreements in private
- Constructive criticism by the preceptors or the colleagues is one of the means of learning and is not meant to embarrass; so must be tolerated and be taken up professionally as a mean of academic improvement and personality development.
- The student must exhibit highest degree of professional conduct and attitude, as a representative of the College of Clinical Pharmacy, KFU and the sacred profession of Pharmacy. This should be particularly kept in mind at the time of any conflicts, if it arises.

## Confidentiality:

- Student will not discuss their patients with other patients, friends, family members or anyone not directly related to each case.
- Confidentiality must be observed in all the areas like: pharmacy records, medical records, patient information, fee systems and professional policies
- Student will not discuss patients in front of other patients or in areas where people may overhear.
- Student will not leave confidential documents (profiles, charts, prescriptions, history records etc.) in public places. Student should understand that inappropriate conduct (e.g., breach of confidentiality)
- Making personal relations with the the patients is strictly prohibited
- The student should sign confidentiality statement if asked by the preceptor.

## Dress Code and Trainee's Badges:

- All students will wear college uniform with a clean, pressed white lab coats at all times in patient care areas (unless restricted/modified due to practice site).
- The student will be required to wear employee identification badges at all times during their training hours.

*Note: Identification badges with names be distributed at the beginning of the clerkship program. Necessary correspondence for registration as well as for the issue of badges will be made by the college in advance.*

## Cancellation of a Rotation:

- College of Clinical Pharmacy may cancel a particular rotation for a student if college receives more than 3 complaints regarding students' attitude, regularity and punctuality. The student will repeat the whole rotation after the completion of routine schedule of the clerkship
- The preceptor may ask the student to repeat his rotation based on student's unsatisfactory performance. The preceptor will forward information to the college on specified proforma, signed by him as well as by the student.

## Important College Contacts:

- |                                     |  |               |
|-------------------------------------|--|---------------|
| • Dean & Head of Training Committee | 03 5800000   | Ext 1784/224  |
| • Coordinator, Clinical Training    | 03 5800000   | Ext: 1812/235 |
| • Mr. Sami Al-Quami:                | 03 58000000  | Ext: 1976/229 |
| • Fax no.                           | 03 5817174   |               |
| • Email:                            | <a href="mailto:clinicalpharmacy@kfu.edu.sa">clinicalpharmacy@kfu.edu.sa</a> |               |

# Mission

Through our APPE Program, the college provides an **experiential learning environment** which will assist our students to become confident, caring, **ethical pharmacy practitioners** with the ability to think critically and apply their knowledge and skills in the best interest of their patients regarding **individualized pharmacotherapy planning, intervention and outcome evaluation.**

The clinical experiences will help students to determine their choice of clinical specialty, to continue successfully in their lifelong learning and practice, to meet their responsibilities to **patients** and the **society.**

## 2. PROFESSIONAL COMPETENCIES

*To be achieved at the end of*

### ADVANCE PHARMACY PRACTICE EXPERIENCE

- |                |  |
|----------------|--|
| COMPETENCY -1: | DISEASE STATE KNOWLEDGE  |
| COMPETENCY -2  | DRUG THERAPY PLANNING AND EVALUATION   |
| COMPETENCY -3  | MONITORING FOR ENDPOINTS   |
| COMPETENCY -4  | PATIENT CASE PRESENTATIONS, written, oral  |
| COMPETENCY -5  | PATIENT INTERVIEWS, EDUCATION AND COUNSELING   |
| COMPETENCY -6  | DRUG INFORMATION   |
| COMPETENCY -7  | PROFESSIONALISM: Team Interaction, motivation  |
| COMPETENCY- 8  | INSTITUTIONAL PHARMACY OPERATIONS DRUG<br>DISTRIBUTION SYSTEMS, MEDICATION<br>ADMINISTRATION |

Adopted from: *ACPE standards as modified by School of pharmacy, University of Florida, USA*

### 3.COURSES

**Clerkship1:** 2003531

**Clerkship 2:** 2003611

**Clerkship 3:** 2003621

**Prerequisite:** The student must pass all the previous courses to take clinical clerkship

**Duration:** 32 Credit hours: 40 weeks, commencing from First week of July each year

**Evaluation:** Pass/No pass grading

#### Mandatory Areas of Rotations

- |   |         |
|---|---------|
| 1. Hospital Pharmacy (in & out patient    | 4 weeks |
| 2. Internal Medicine                      | 4 weeks |
| 3. Cardiology/CCU/ /Critical Care         | 4 weeks |
| 4. Surgical , ICU and Nutritional Support | 4 weeks |
| 5. Emergency Medicine                     | 4 weeks |
| 6. Ambulatory Care                        | 4 weeks |
| 7. Hematology & Oncology                  | 4 weeks |
| 8. Nephrology/Endocrinology               | 4 weeks |
| 9. Infectious diseases                    | 4 weeks |
| 10. Pediatrics                            | 4 weeks |



# 1. GENERAL GOALS AND OBJECTIVES

## Goals:

To develop a sufficient, relevant, and experiential knowledge base to utilize appropriate resources necessary to provide direct patient care regarding individualized Therapeutic planning, intervention and evaluation.

To master the clinical skills necessary to assume accountability and responsibility for therapeutic outcomes in the process of providing pharmaceutical care.

To develop professionalism and interpersonal skills as a member of team of health care providers, necessary for the provision of optimal patient care and pharmacy services

## Objectives:

### A. Management of Disease States

After successful completion of the clerkship, the student will be able to:

1. Take and record the patient history including HPI, PMH, FH, SH and record the findings of clinical examination.
2. Interpret the information from the patient's laboratory examination in assessing the disease state(s) and reaching/confirming the final diagnosis of the patient.
3. Discuss the currently acceptable options of investigation and treatment for the patient's disease state based on the best evidence available.
4. Utilize information from 1, 2, and 3 in formulating a **individualized therapeutic plan** for the patient, which will include:
  - a. Therapeutic objectives, with end point of the therapy
  - b. Pharmacologic and non pharmacologic treatment
  - c. Follow up evaluation plan
  - d. Evaluation of therapeutic outcomes
5. Discuss various therapeutic options with the patient (if feasible) as well as with the other health care providers, if asked for
6. Discuss potential drug-disease, drug-drug, drug-laboratory test, and drug-dietary problems prior to making recommendations on drug therapy. These recommendations will include:
  - a. Selection of Drug(s) or non drug therapy
  - b. Dosage
  - c. Route of Administration
  - d. Frequency of Administration
  - e. Duration of Therapy
  - f. Drug dosage Adjustment Consultation

### B. Patient Monitoring

After successful completion of the clerkship the student will be able to:

1. Monitor daily progress of the patient's disease state(s) and drug therapy based upon relevant laboratory data, physical findings, subjective findings, and consultation with medical team.
2. Identify existing or potential adverse reactions and/or treatment of failures, provide assessment and recommend management approaches.

3. Utilize the medication history and patient's medical record to identify drug incompatibilities, interactions, and abuses to assess their clinical significance and to discuss potential solutions.
4. Apply pharmacokinetic dosing principles to dosing of selected drugs and monitor specific drug therapy.

### **C. Patient Chart/Data Review**

After successful completion of the clerkship the student will be able to:

1. Demonstrate the ability to retrieve required information from the medical record (paper or electronic) and assess patient specific information necessary for drug therapy monitoring. In that regard, student will familiarize him/herself with regard to:
  - a. Chart arrangement.
  - b. Specific types of information contained therein. For example, admission note history and findings from Physical examination, physician order, laboratory results, progress notes (S.O.A.P notes)
  - c. Medication administration record, , diabetic management sheet and patient file.
  - d. Medical abbreviations.
2. Plan interventions based on the information retrieved, if asked for
3. Present the information in a concise and complete manner.

### **D. Laboratory findings:**

After successful completion of the clerkship the student will be able to:

1. Recognize the significance of both normal and abnormal laboratory tests and reports.
2. Interpret the lab findings regarding to the patient disease state(s), in diagnosis and follow up evaluation
3. Utilize the lab finding in formulating the individualized drug therapy plan, follow up evaluation and identifying the drug therapy problems.

### **E. Medication History**

*Note Each student should have numerous opportunities to interview patients. No patient should be interviewed without approval by the preceptor. The student should keep in mind that not all patients are good candidates for interviewing. Ask for guidance from your preceptor if assistance is needed in patient selection.*

After successful completion of the clerkship the student will be able to:

1. Obtain through direct interview, a patient medication history to identify: prescription and non-prescription usage, medications administration habits, procurement sources for drugs, compliance with prescribed therapy, and previous adverse drug reactions or allergies.

### **F. Drug Information**

After successful completion of the clerkship the Clinical Pharmacy student will be able to:

1. Apply skills related to utilizing the drug information resources to answer questions related to drug use and toxicity.
2. Demonstrate the ability to retrieve, evidence based drug information, critically evaluate and utilize when providing answer to a question.
3. Respond to drug information requests appropriately and in a timely manner.
4. Communicate information verbally and in written.

### **G. Discharge Medication Counseling**

*Prior to counseling a patient, the student should have a comprehensive understanding of the medication to be discussed, including the drug's indications, mechanism of actions, pharmacology, appropriate use and administration, storage, common adverse effects and precautions. The student should review this information with the preceptor prior to interacting with the patient.*

After successful completion of the clerkship the Clinical Pharmacy student will be able to :

1. Provide organized and individualized instruction to patient about their diseases and drugs prescribed to improve the patient's understanding and willingness to accept proper treatment.
2. Advise patients on proper utilization of prescription and nonprescription drugs including expected drug effects and potential drug-drug, and drug-dietary interaction warning, storage, etc.



## 2. ACTIVITIES OF THE STUDENT

Each student will be assigned to a preceptor and thus to a specific medical team and they are expected to become an active member of such teams.

During the four-week rotations students are required to actively participate in patient care as outlined below:

1. Maintain **rotation activity log**, duly signed by the preceptor at the end of a specific activity
2. Attend daily rounds and morning meetings with assigned medical team.
3. Monitor patients assigned by preceptor. The student is required to maintain a patient specific document to record patient database information, drug therapy problems, monitoring, parameters, recommendations, and follow-up. (*Please refer to the Sections on Guidelines*)
4. Meet with preceptor daily for discussion session that may includes:
  - a. Giving informal oral presentation of assigned patients to preceptor and fellow students.
  - b. Provide daily update to preceptor and fellow students on patients you are following.
  - c. Discusses reading material assigned by preceptor
5. Conduct at least 2 patient interview to obtain drug histories
6. Conduct a patient drug consultation.
7. Journal club Presenting: at least one article summary per week, assigned to you by preceptor
8. Supply drug information question assigned by preceptor if asked for; but don't volunteer yourself for this; or don't comment on the issue, you are not asked for.
9. Attend clinic-pathologic conferences in the department/grand rounds or other selected medical conference when arranged.
10. Attend clerkship meeting as per schedule given by the preceptor
11. Attend all the activities, other than the above mentioned, like CME sessions, but with the permission of the preceptor

## 3. TEXTBOOKS / REFERENCES

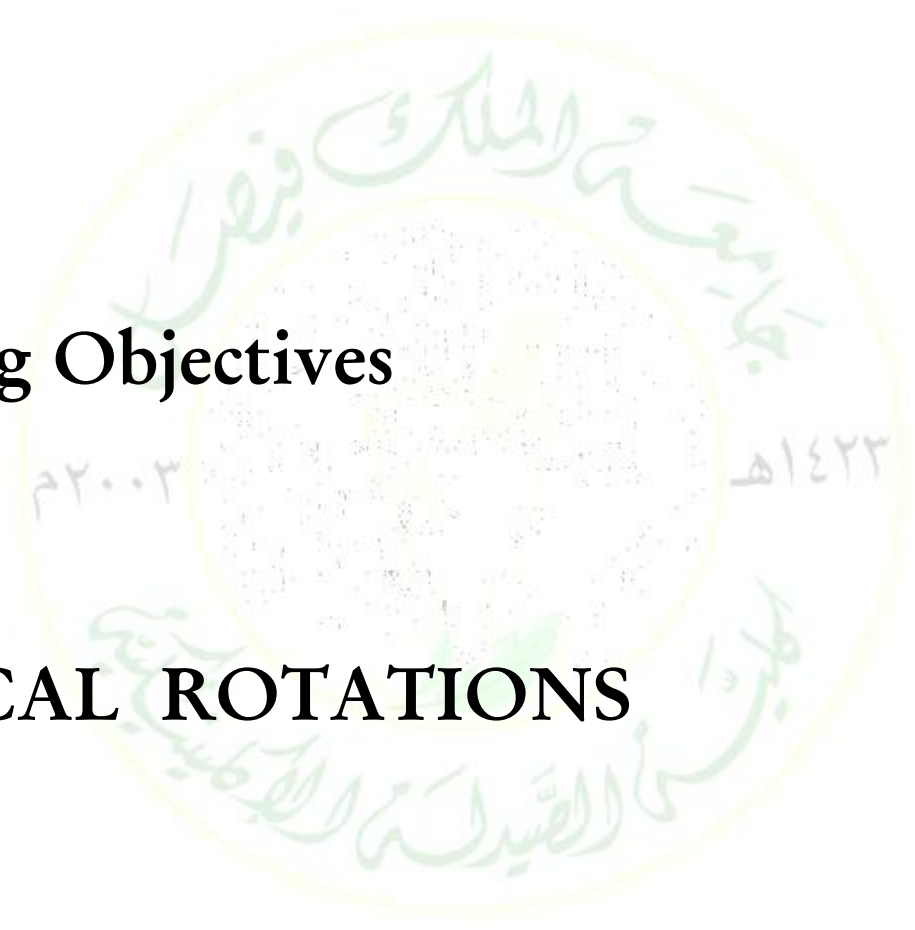
1. **Pharmacotherapy, a Pathophysiologic Approach**, 7<sup>th</sup> Ed, DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, eds. McGraw-Hill, New York, NY.2008
2. Pharmacy Student Survival Guide Ruth Nemire (Author), Karen Kier, The McGrawHill Companies: 2009
3. Pharmacy Practice Clinical Manual Boh L, ed, 2ed. Lippincott, 2002.
4. A Practical Guide to Contemporary Pharmacy Practice: Judith E. Thompson Lippincott Williams & WilkinsP 2009
5. Materials as assigned by preceptor or participating health care professionals

**Part II:**

**Learning Objectives**

*Of*

**CLINICAL ROTATIONS**



## 1. INSTITUTIONAL PHARMACY ROTATION

### **Goal:**

To expose students to the practice of institutional pharmacy, to provide the opportunity to explore the health care team approach to patient care, the role of pharmacists in professional decision making, and how the pharmacist and staff supports the well-being of the patient.

### **Rotation Specific Learning Objectives:**

1. Students shall understand the philosophy of the pharmacy department and its role in patient care.
2. Students shall be able to define and describe the role and function of members within the pharmacy department
3. Students shall demonstrate and understand pharmacy operations:
  - a. Medication orders
  - b. Order processing
  - c. Automated medication systems
  - d. Inspection and filling of medication storage units
  - e. Inventory Management
  - f. Demonstrate Knowledge of Procedure For Disposal Of Expired Medication
4. Students shall observe, understand and demonstrate medication administration in the institutional setting including:
  - a. Medication administration records
  - b. Narcotic count sheets
  - c. Injectable administration
  - d. Intravenous (IV)
  - e. Intramuscular (IM)
  - f. Subcutaneous (SQ)
  - g. Oral administration
5. Students shall demonstrate and understand: Sterile products compounding
  - a. Understand and apply aseptic techniques
  - b. Demonstrate the ability to complete calculations
  - c. Know how to find information related to:
    - i. IV compatibility
    - ii. IV stability
    - iii. IV expiration
6. Students should observe and understand: Clinical Services
  - a. Medication Management
  - b. Dosing
  - c. Therapeutic recommendations
  - d. Medication Reconciliation
  - e. Patient education and discharge counseling
  - g. Medication Error reporting
7. Understand The Functional Role Of The Pharmacy And Therapeutics (P&T)Committee and other professional committees

## 2. AMBULATORY CARE ROTATION

The general goals and objectives for the Ambulatory Care Rotation are discussed below. All goals and objectives may not be addressed at every training slot, depending on patient load, types of patient encountered, and length of rotation. Learning strategies to meet the goals and objectives are simply suggestions and may be modified by the preceptor to meet the individual student's needs

### **General Goals**

1. Appreciate common medications used in primary care.
2. Understand the common diseases encountered in primary care.
3. Understand the use of drug information resources.
4. Understand the need for a complete patient database.
5. Appreciate appropriate physical assessment techniques.
6. Understand history-taking process.
7. Appreciate the importance of patient education.
8. Become an effective communicator on the health care team.
9. Appreciate the importance of drug-related problems.
10. Solve drug-related problems.
11. Appreciate the importance of outcomes monitoring.
12. Understand the role of the pharmacist in collaborative drug therapy management (CDTM).

### **Rotation Specific Learning Objectives:**

#### **1. Appreciate the common medications used in primary care.**

By the end of the rotation, students will be able to do the following for medications commonly used in primary care:

- a. Identify the drug class.
- b. List indications for use.
- c. Describe the mechanism of action.
- d. Describe potential adverse drug events.
- e. Identify the potential time course for adverse drug events.
- f. List monitoring parameters for therapeutic efficacy.
- g. List monitoring parameters for potential adverse drug events.
- h. Identify potential drug-drug interactions.
- i. Identify drug-disease interactions.
- j. Evaluate cost-effectiveness compared to other therapeutic options.
- k. List contraindications for use.
- l. Identify pregnancy category.

#### **2. Understand the common diseases encountered in primary care.**

By the end of the rotation, students will be able to do the following for diseases commonly used in primary care:

- a. Describe the epidemiology of the disease.
- b. Discuss the pathophysiology of the disease.
- c. List the negative outcomes of the disease.
- d. Discuss the impact of the disease on the patient and the healthcare system.
- e. Describe strategies to prevent the disease.

- f. Discuss non-pharmacological strategies to treat the disease.
- g. Outline a treatment algorithm for managing the disease.
- h. Apply clinical practice guidelines to the care of patients.

### **3. Understand the use of drug information resources.**

By the end of the rotation, a student will be able to:

- a. Identify a patient-specific question.
- b. List appropriate resources for answering a question.
- c. Develop a search strategy for answering a question.
- d. Apply the evidence-based medicine (EBM) approach to a specific patient.
- e. Critically evaluate literature to determine strengths and weaknesses of a study.
- f. Provide answers in a timely fashion.

### **4. Understand the need for a complete patient database.**

By the end of the rotation, the student will be able to:

- a. Organize the appropriate information for a pharmacist workup of drug therapy (PWDT) from the patient and/or the medical record: (Page: )
  - i. Demographic data of patient
  - ii. Chief complaint
  - iii. History of present illness
  - iv. Past medical history
  - v. Family history
  - vi. Social history
  - vii. Current medications
  - viii. Past medications
  - ix. Vital signs
  - x. Review of systems
  - xi. Pertinent positives of the physical examination
  - xii. Pertinent negatives of the physical examination
  - xiii. Laboratory results
- b. Perform blood pressure measure accurately.
- c. Perform heart rate measurement accurately.
- d. Perform respiration rate measurement accurately.
- e. Other, e.g., peak flow and glucose monitoring.

### **5. Appreciate the importance of effective communication with patients and the health care team.**

By the end of the rotation, the student will be able to:

- a. Provide patient education at the appropriate level for the individual patient.
- b. Identify and address patients specific needs and questions.
- c. Provide correct information to patients.
- d. Ask patients to verbalize understanding.
- e. Demonstrate appropriate nonverbal mannerisms with patients.
- f. Discuss the role of the pharmacist in patient education.
- g. Demonstrate the appropriate use of devices (peak flow meters, glucometers, etc.)
- h. Describe the appropriate use of medications.
- i. Discuss the rationale for treating a disease.



- j. Provide written instructions to reinforce important points.
- k. Present recommendations to providers in a manner that are:
  - Clear
  - Organized
  - Evidence-based
  - Patient-specific
- l. Discuss patient-specific options with team members.
- m. Describe evidence for recommendations and decisions.
- n. Document interventions and follow-ups appropriately in the chart using SOAP or FARM

**6. Appreciate the importance of drug-related problems.**

By the end of the rotation, the student will be able to:

- a. Discuss the impact of drug-related problems on the patient and the healthcare system.
- b. Identify drug-related problems including:
 

i. Non-adherence	vi. Drug-disease interaction
ii. Incorrect dose	vii. Therapeutic failure
iii. Incorrect schedule	viii. Therapeutic duplication
iv. Adverse drug event	ix. Ineffective medication
v. Drug-drug interaction	x. Not cost-effective
- c. List additional information necessary to further assess drug-related problems.
- d. Prioritize drug-related problems
- e. Describe the etiology of a specific drug-related problem.
- f. Develop a plan for solving drug-related problems for a specific patient.
- g. List alternative therapies for treatment.
- h. List patient factors that aid in therapy selection.
- i. Describe the evidence that supports the therapeutic plan.

**7. Appreciate the importance of outcomes monitoring.**

By the end of the rotation, the student will be able to:

- a. Identify monitoring parameters for therapeutic efficacy in a specific patient.
- b. Identify monitoring parameters for adverse drug events in a specific patient.
- c. Develop a therapeutic plan for monitoring drug therapy.
- d. Describe the frequency for outcomes monitoring.
- e. Manage drug therapy.

**8. Understand the role of the pharmacist in Collaborative Drug Therapy Management (CDTM).**

By the end of the rotation, the student will be able to:

- a. Define CDTM.
- b. Discuss the role of the Clinical Pharmacist Practitioner.
- c. Describe the benefits of pharmaceutical care.
- d. List types of patients that benefit from CDTM.

### 3.CARDIOLOGY & INTENSIVE CARDIOLOGY CARE (ICC)

#### **Goal:**

To prepare the student with a knowledge base and problem solving skills relating to the management of patients with common cardiovascular problems with pharmaceutical care perspective.

#### **Rotation Specific Learning Objectives:**

Upon completion of the rotation, the student shall be able to:

1. Gather and relate to the patient's clinical course all diagnostic, monitoring, pharmacologic, therapeutic, and surgical interventions employed in those patients with coronary disease.
2. Identify and apply the pharmacological and non pharmacological aspects of cardiopulmonary resuscitation (CPR) and will participate in all such events. The student will be able to locate the various drugs and other ancillary items (i.e., ABG kits, IV bags, laryngoscope) in the Crash Cart and be able to discuss drug therapy used in CPR.
3. Gain competence in understanding the basic concepts of hemodynamic monitoring utilizing data obtained from Swan-Ganz arterial, or central venous catheters and other pertinent information (i.e., arterial blood gases).
4. Relate the etiology, pathophysiology, clinical manifestations, and treatment of those cardiovascular disease states encountered. Specific attention should be focused on pharmacologic interventions. Disease states include, but are not limited to:
  - a. Ischemic Heart Disease
  - b. Essential hypertension, hypertensive urgencies and emergency
  - c. Ventricular and atrial arrhythmias
  - d. Congestive Heart Failure/Cardiomyopathy
  - e. Cardiogenic Shock
  - f. Endocarditis
  - g. Hyperlipidemia Anticoagulation, Cerebrovascular diseases

#### **Activities**

*The student will participate on both ICC and ward activities. Responsibilities will include, but not necessarily be limited to:*

1. Attending ICC and Cardiology Rounds
2. Reviewing patient charts, and prepare case histories 2/week
3. Interviewing patients, counseling patients, actively taking part in intervention 2/week
4. Arranging and writing for discharge medications, 2/week
5. Understanding ECG: Rate, rhythm, arrhythmias, Ischemia, Hypertrophy,
6. Observing specialized cardiology procedures available like cardiac catheterization (angiography and percutaneous coronary intervention (PCI)).
7. Case presentation and Journal Club as organized/assigned by the preceptor
8. Any additional activities assigned by the preceptor

## 4. INTERNAL MEDICINE

### **Goal:**

To prepare the student with knowledge base and problem solving skills relating to the management of patients with pharmaceutical care perspective

### **Rotation Specific Learning Objectives:**

Upon completion of this rotation, students should be able to:

1. Given a particular disease state, describe its pathophysiology, clinical presentation, diagnosis, and provide a treatment plan based upon evidence based medicine.
2. Evaluate the significance of a patient's pharmacokinetic parameters when determining an appropriate drug therapy.
3. Provide appropriate monitoring parameters for the chosen treatment plan (including efficacy, toxicity, side effects, and potential drug interactions).
4. Effectively communicate the drug treatment plan to the patient with the appropriate precautions and expectations.
5. Effectively communicate therapeutic interventions to other members of the health care team.
6. Provide adequate documentation and literature support for therapeutic recommendations.
7. Evaluate the quality of the literature utilized in making recommendations.
8. Utilize basic physical assessment skills to evaluate patients.
9. Discuss or demonstrate the administration of intramuscular, subcutaneous, intravenous, rectal, inhaled, and topical medications.

### **Activities**

1. Attending morning meetings and daily rounds
2. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
3. Case presentation at least 2 in rotation (with faculty members of the unit)
4. Interviewing patients, counseling patients, 2/week
5. Arranging and writing for discharge medications, 2/week
6. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
7. Observing diagnostic invasive procedures
8. Any other activities assigned by the preceptor

## 5. PEDIATRICS

### **Goal:**

To prepare the student with knowledge base and problem solving skills relating to the management of pediatric patients with pharmaceutical care perspective

### **Rotation specific learning objectives:**

Upon completion of this rotation, students should be able to

1. Discuss and apply drug dosing and management of the pediatric patient.
2. Provide general pediatric drug information, including appropriate pediatric dosing, antibiotic therapy, pain and sedation management, and pharmacokinetic analysis.
3. Monitor patient therapy and progression, in consult with physicians and nurses,

### **Activities:**

1. Attending morning meetings and daily rounds
2. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
3. Case presentation at least 2 in rotation (with faculty members of the unit)
4. Interviewing patients, counseling patients, 2/week
5. Arranging and writing for discharge medications, 2/week
6. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
7. Observing diagnostic invasive procedures
8. Any other activities assigned by the preceptor

## 6. CRITICAL CARE

### **Rotation Specific Learning Objectives:**

Upon completion of this rotation, students should be able to

1. Present patients in a problem-oriented approach, highlighting each pharmacotherapy problem, drug therapy, monitoring parameters and endpoints of therapy.
2. Discuss the disease states commonly encountered in critically ill patients and the treatment options.
3. Demonstrate knowledge and skill in Critical Care Pharmacology, Fluid electrolyte balance, cardiovascular hemodynamics and ventilator support
4. Perform therapeutic drug monitoring in critically ill patients for: aminoglycosides, vancomycin, phenytoin, digoxin.
5. Communicate at an appropriate level with other health care professionals, including attending physicians, fellows, residents, nursing staff, respiratory therapists, dietitians, as well as other pharmacy colleagues in order to optimize drug therapy
6. Understand of the prevention and treatment of complications in the critically ill patient.
7. Reviewing, monitoring, and optimizing pharmacotherapy of select patients.
8. Tight glycemic control, DVT prophylaxis, stress ulcer prophylaxis, prevention of ventilator associated pneumonia, sepsis, etc.

### **Activities**

1. The student will attend all the academic activities in an ICU
2. Attending morning meetings and daily rounds
3. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
4. Case presentation at least 2 in rotation (with faculty members of the unit)
5. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
6. Observing diagnostic invasive procedures
7. Any other activities assigned by the preceptor

## 7. HEMATOLOGY/ONCOLOGY

### **Goal:**

The rotation will provide the student with the opportunity to develop skills in therapeutic management of hematology/oncology patients, including pharmaceutical as well as supportive care.

### **Rotation Specific Learning Objectives:**

Upon completion of the rotation, the student shall be able to:

1. Develop primary and alternative plan for therapeutic management of the following condition, with a sound knowledge of symptomatology, physical findings, pathophysiology, diagnostic procedures, laboratory tests .
  - a. Hematologic malignancy
    - i. Leukemias (acute nonlymphocytic, acute lymphocytic, chronic myelogenous, chronic lymphocytic)
    - ii. Hodgkin's disease
    - iii. Non Hodgkin's lymphoma
    - iv. Multiple myeloma
  - b. Solid tumors
    - i. Breast cancer
    - ii. Lung cancer (small cell, non small cell).
    - iii. Gastric cancer.
    - iv. Colon cancer
    - v. Genitourinary tract cancer (cervical, ovarian, endometrial, prostate, testicular, urinary bladder, kidney)
2. Familiar with the role of diagnostic, palliative, and curative radiation therapy and surgery in cancer management including the monitoring and management of the associated complications.
3. Establish therapeutic and toxic endpoints of therapy.
4. Develop plan for supportive-terminal (hospice) care and pain control for these patients

### **Activities**

1. Participate in providing pharmaceutical care for patients
    - a. Plan for antibiotic therapy, and pharmacokinetic monitoring (especially aminoglycosides, vancomycin, methotrexate, and tacrolimus), TPN and electrolyte replacement, chemotherapy order writing and review, pharmaceutical care documentation, patient interviews, discharge planning and patient education,
  2. Symptom management including, but not limited to: chemotherapy induced nausea and vomiting, pain management, and nutrition.
-

## 8. NEPHROLOGY

### **Goal:**

This rotation is designed to provide the student with an opportunity to develop his/her skills in management of Acute and Chronic Renal Failure, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring .

### **Rotation Specific Learning Objectives:**

Upon completion of the rotation, the student shall be able to:

1. Develop management plan under supervision of nephrologist for acute and chronic failure based upon etiology clinical presentation, pharmacodynamic and pharmacokinetic parameters, and medical history of the patient
2. Demonstrate the application of the principles of renal replacement therapy.
3. Communicate the treatment plan with patient.
4. Monitor drug dosing, adverse events, drug interactions, and efficacy of all medications affecting the renal system and recommend changes in drug therapy when appropriate

### **Activities**

1. Attending morning meetings and daily rounds
2. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
3. Case presentation at least 2 in rotation (with faculty members of the unit)
4. Interviewing patients, counseling patients, 2/week
5. Arranging and writing for discharge medications, 2/week
6. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
7. Observing diagnostic invasive procedures
8. Any other activities assigned by the preceptor

## 9. EMERGENCY MEDICINE

### **Goal:**

To prepare the student with a knowledge base and problem solving skills relating to the provision of emergency medical care by exposing him to an experience with the EMS System, with a team of health care professionals.

### **Rotation Specific Learning Objectives:**

Upon completion of this rotation, the student shall be able to:

1. Ensure the delivery of the right medication to right patient and utilize other aspects of pharmaceutical care and ensure the most appropriate therapy is chosen and administered.
2. Utilize patient data to identify potential and present medication related problems.
3. Assess medication errors, drug interactions and adverse drug reactions as causes of ED admissions.
4. Conduct history of patients and family members when appropriate.
5. Participate in the physical exam and assess the patient's diagnosis for the most appropriate treatment protocol
6. Make therapeutic recommendations in an ED setting based upon evidence based medicine.
7. Identify and apply the pharmacological and non pharmacological aspects of cardiopulmonary resuscitation (CPR) and will participate in all such events. The student will be able to locate the various drugs and other ancillary items (i.e., ABG kits, IV bags, laryngoscope) in the Crash Cart and be able to discuss drug therapy used in CPR/ACLS.



## 10. INFECTIOUS DISEASES

### **Goal:**

To prepare the student with a knowledge base and problem solving skills relating to the treatment of infectious diseases with antimicrobial agents with a pharmaceutical care perspective

### **Rotation Specific Learning Objectives:**

Upon completion of this rotation, the student shall be able to:

1. Plan for therapeutic management of common and serious infectious diseases with demonstration of strong knowledge base in the area of, symptomatology, physical findings, pathophysiology, diagnostic procedures, and laboratory tests.
2. Demonstrate a working knowledge of the spectrum of activity, pharmacokinetic principles, tissue penetration, and cost of the following antimicrobial agents:
  - a. Penicillins
  - b. Cephalosporins
  - c. Monobactams
  - d. Carbapenems
  - e. Macrolides
  - f. Sulfonamides
  - g. Fluoroquinolones
  - h. Metronidazole
  - i. Glycopeptides
  - j. Tetracyclines
  - k. Aminoglycosides
  - l. Antivirals
  - m. Monoclonal antibodies
  - n. Antifungals
3. Define appropriate utilization and understanding of laboratory tests specific to infectious diseases including:
  - a. Antimicrobial susceptibility testing
  - b. MIC and MBX determinations
  - c. Serum bactericidal titers
  - d. Immunologic techniques including:
  - e. ASO/AHT titers  
Serological testing for legionella, mycoplasma, and hepatitis
  - f. General smear and staining techniques
  - g. Limitations and techniques of culture and susceptibility testing
  - h. Concepts regarding synergy testing and post-antibiotic effects
  - i. Interpretation of white blood cell count and differential, and adequacy of specimens obtained for stain and culture
  - j. Interpretation of non specific laboratory evaluations including erythrocyte sedimentation rate, serum complement levels, and acute phase reactants
4. Understand the underlying mechanisms of infections in general, including alterations in specific host defense mechanisms
5. Demonstrate an understanding of drug-induced and non-drug-induced antimicrobial resistance

### **5. Activities**

1. Attending morning meetings and daily rounds
2. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
3. Case presentation at least 2 in rotation (with faculty members of the unit)

4. Interviewing patients, counseling patients, 2/week
5. Arranging and writing for discharge medications, 2/week
6. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
7. Observing diagnostic invasive procedures
8. Any other activities assigned by the preceptor

## **9. GENERAL SURGERY**

### **General Goals and Activities**

1. Review of anesthetic gases, neuromuscular blockers, reversal agents, surgical infection prevention, local anesthetics, analgesics, and cardioplegia.
2. Working knowledge of processes encountered in a surgery pharmacy satellite such as narcotic documentation and disposal.
3. Observe various surgical procedures and will follow selected patients from the preoperative holding area, through the intra-operative process, and the post-anesthesia care unit
4. Discuss all medications used.
5. Familiar with the management of patients receiving parenteral nutrition.
6. Journal club and formal presentation.

## **11. OBSTETRICS/GYNECOLOGY (optional)**

### **Goal:**

To prepare the student with the necessary knowledge base and problem solving skills in an obstetrics/gynecology environment with a pharmaceutical care perspective

### **Rotation Specific Learning Objectives:**

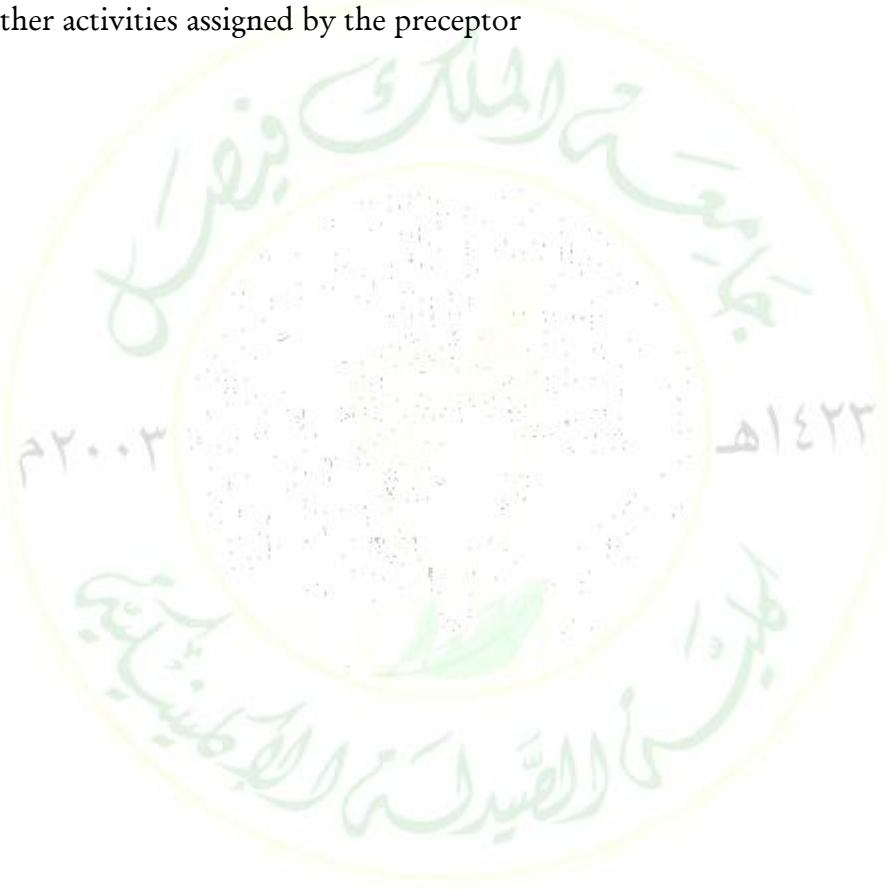
Upon completion of this rotation, the student shall be able to:

1. Describe the symptomatology, physical findings, pathophysiology, diagnostic procedures, laboratory tests, and treatment for all encountered medical illnesses during pregnancy.
2. Describe the physiologic changes that occur during pregnancy.
3. Discuss the pharmacologic agents that may be harmful to the fetus or mother if used during.
4. Discuss the pharmacologic agents that may be harmful to the child if used during breast feeding.
5. Discuss the problem solving process to determine the risk vs. benefit of using drug therapy during pregnancy and lactation.
6. Describe the standard medical care of a pregnant patient.
7. Describe commonly encountered gynecologic diseases and their treatment, monitoring, and follow up.
8. Provide counseling to patients requiring drug therapy.

### **Activities**

1. Attending morning meetings and daily rounds
2. Reviewing patient charts, and prepare case histories 2/week (history, lab, clinical exam, therapeutic plan, prescription, as per attached Case Recording Proforma)
3. Case presentation at least 2 in rotation (with faculty members of the unit)

4. Patients, counseling patients, 2/week
5. Arranging and writing for discharge medications, 2/week
6. Journal club: select and present a recent review article on topic assigned by the preceptor at least 2 in rotation
7. Observing diagnostic invasive procedures
8. Any other activities assigned by the preceptor



# Part III: Guidelines





**King Faisal University**  
**College of Clinical Pharmacy**  
 Department of Pharmacy Practice

PO Box 400, Al-Ahsa 31982. Phone: +966 3 5817175 Fax: +966 3 5817174

**ROTATION ACTIVITY LOG**

*Must be submitted to the College within one week of end of each Rotation*

Name of the student \_\_\_\_\_ University # \_\_\_\_\_ Rotation \_\_\_\_\_

Rotation site \_\_\_\_\_

Student should complete the following proforma for each rotation, got it signed and submit to the college after not late than 1 week of the end of rotation. Proforma may be downloaded from college website/WebCT

Sr. #		Week1	Week 2	Week 3	Week4
1.	Attending the round & Morning meetings				
2.	Reviewing patient charts				
3.	Interviewing/counseling patients				
4.	Arrange writing for discharge medications (or Participate)				
1.	Case presentation				
2.	Journal club				
5.	Observing procedures,				
6.	Any additional activity assigned by the preceptor				

Name & Signature of the Preceptor \_\_\_\_\_ Date \_\_\_\_\_



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Ptients' Profile form

Student's Name \_\_\_\_\_

University# \_\_\_\_\_

1. PATIENT'S PROFILE:

a. Name.....Age.....Gender.....Admission date.....

b. Weight.....Hight.....Allergies.....

2. HPI (History of Present illness)

CC (Chief Complaints) with duration (for which the patient attended/admitted the hospital  
Please give a little detail of each)

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3. PMH: Past Medical History(brief, any major disease in the past

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4. SH: (Social History): about his job, habits, living alone or family, any family problem, smoking; if yes, how many, any hobbies, like playing something etc

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5. FH: (Family History) (same or similar disease, or any other chronic disease in family, father, mother, brother, sister (blood relations) (particularly, Diabetes, Ischemic heart Disease, Hypertension, Stroke, Tuberculosis etc

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6. Medication (including home medications, self medications) Trade name with generic names, dose and duration, whether taking regularly or not

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7. ROS/PE: (Review of Systems/Physical Examination) (You may consult the resident for findings)

General appearance: conscious, alert, oriented, looks healthy or sick, pale, cyanosed etc

.....  
.....  
.....

Temperature.....Pulse rate ..... Blood pressure .....Respiratory rate.....

Anemia..... Jaundice..... Cyanosis..... Edema..... Ascites.....

Any significant clinical finding in any system,.(please consult the resident on duty)

- HEENT (head, ear, eyes,nose,throat)
- Skin.....
- Lungs.....
- Heart.....
- Abdomen.....
- Extermities.....





## LAB RESULTS

*You may add/delete rows for patient to patient, for addition of other tests like LFT's, Lipid profile, Urine report, C/S for infections etc*

Date →	Admission	Follow up.1	Follow up.2	Follow up 3
WBC				
PMN (Neutro)				
Lympho				
Band				
Hb	١٢-١٣		١٤-٢٢	
HcT				
Platelets				
MCV				
Glucose				
Na				
K				
Cl				
BUN				
Scr				
Cr.Cl				

**PROGRESS NOTES**

*You may use the SOAP format or simply problems, findings and therapy/or advice*

**Date:**.....

Subjective.....

Objective.....

Assessment.....

Plan.....

**Date:**.....

Subjective.....

Objective.....

Assessment.....

Plan.....

**Date:**.....

Subjective.....

Objective.....

Assessment.....

Plan.....

**Date:**.....

Subjective.....

Objective.....

Assessment.....

Plan.....

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### Patients' Counseling Form

**Counseling Session Information:**

Medication name, strength and dosage form:			
Patient DOB:	Sex:	Height:	Weight:
Allergies:			
Disease History:			

**Counseling Documentation - Please answer all questions in completely and in writing. Do not put check marks in the boxes.**

Questions	Answers
Did you identify the patient and yourself?	
Did you explain the purpose of counseling?	
Did you name and show the medication to the patient, verifying that the prescription was filled correctly?	
<b>Question: What did the prescriber tell you the medication is for?</b>	
<b>Question: How did the prescriber tell you to use the medication?</b> What route, how much, how often and when? Taken with or without food? Duration of therapy? What to do if a dose is missed? Other instructions?	
<b>Question: What did the prescriber tell you to expect?</b> Therapeutic effects? Potential side/adverse effects? Precautions?	
<b>Final Verification: Just to be sure I did not leave anything out, please tell me how you are going to take your medication.</b>	
<b>Question: What are some questions you might have related to your drug therapy?</b>	

Student's Name: \_\_\_\_\_

Date: \_\_\_\_\_

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## Guidelines for Pharmacotherapy Case Presentation

*Robert J. Cipolle, Peter C. Morley: Pharmaceutical Care Practice: The Clinician Guide*

### **Assessment**

1. Brief description of the patient (age, gender, appearance)
2. Primary reason for the patient encounter or visit
3. Additional patient background/demographics
4. The medication experience as reported by the patient (wants, expectations, concerns, understanding, preferences, attitudes, and beliefs that determine the patient's medication taking behavior)
5. Comprehensive medication history (allergies, alerts, social drug use, and immunization status)
6. Current medication record: description of all medical conditions being managed with pharmacotherapy with the following associations made:
7. Indication Drug product Dosage regimen Result to date
8. Relevant past medical history: outcomes of past medication use
9. Review of systems
10. Identification of drug therapy problems: description of the drug therapy problem, medications involved, and causal relationships
11. Prioritization of multiple drug therapy problems
12. Summary of the assessment

### **The Care Plan (for Each Indication)**

1. Goals of therapy
2. Clinical and laboratory parameters used to define the goal of therapy Observable, measurable value and timeline for each
3. How you plan to resolve the patient's drug therapy problems
  - a. Therapeutic alternative approaches considered: Backup plan
  - b. Rationale for your product and dosage selections
4. How you plan to achieve the goals of therapy
5. Nonpharmacologic interventions
6. Prevention of drug therapy problems
7. Schedule for follow-up evaluation

### **Follow-Up Evaluation**

1. Clinical and/or laboratory evidence of effectiveness of drug therapies for each indication
2. Clinical and/or laboratory evidence of safety of every drug regimen
3. Evidence of compliance
4. Evaluation of outcome status
5. Changes required in drug therapies
6. Schedule for future evaluations
7. Summary of Case



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### Guidelines for Journal Club

#### Important:

1. Select an article with clinical applicability
2. Organize the presentation
3. Sequential presentation - put yourself in the shoes of the investigator
4. Be familiar with related trials, methods of measurement
5. Work with preceptor to determine if you should prepare a handout

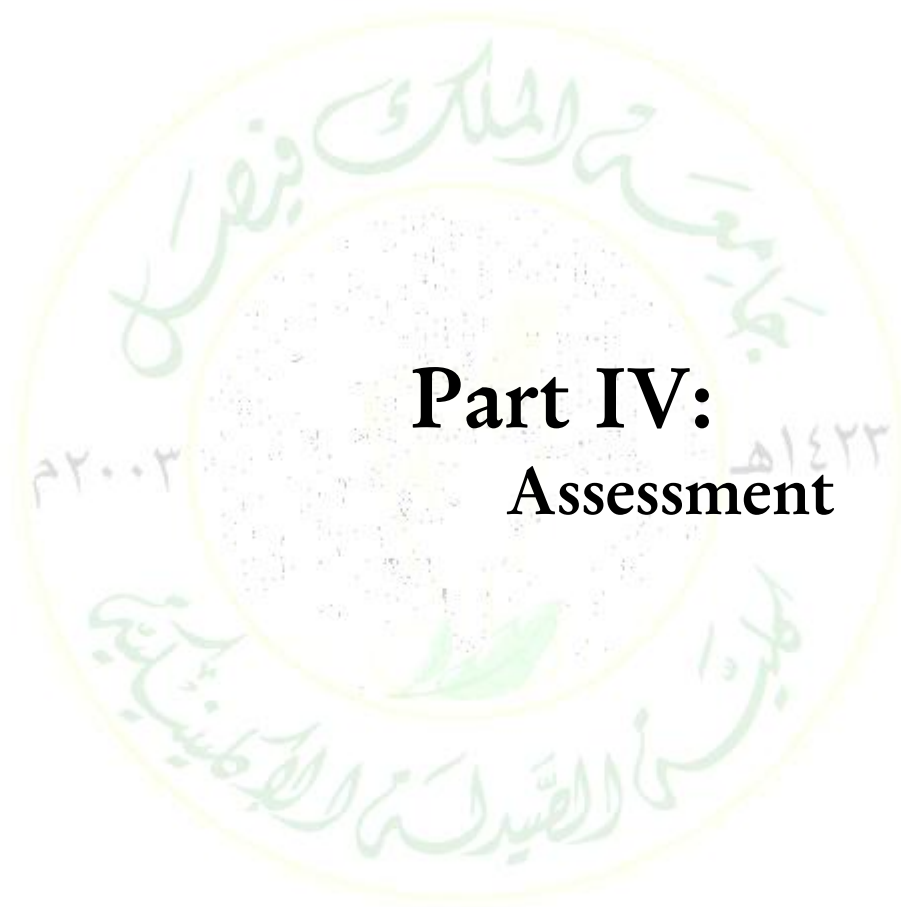
#### Evaluation Criteria

1. The Journal
  - a. Discuss the journal.
  - b. Affiliation with a professional society or organization
  - c. Impact factor - Journal Citation Reports
2. The Article
  - Discuss general aspects of the article.
    - **A. General Comments**
      - Author expertise and qualifications
      - Financial support - independent vs. industry
      - Other conflicts of interest
    - **B. Title**
      - Descriptive
      - Reflects objectives
    - **C. Abstract**
      - Objectives, methods, results, conclusions -not just favorable findings
    - **D. Introduction**
      - Discuss the background, study rationale, purpose and objectives
        - **Study rationale**
          - Logical
          - Sufficient detail on study background
        - **Study purpose and objectives**
          - Clear
          - Unbiased
          - Logical
    - **E. Methods**
      - Discuss the study methods, step-by-step (as written in the article)
        - **Methods**
          - Logical
          - Sufficient detail
          - Contemporary or outdated methods

- References to standard methods, or Description of modified methods, if applicable
- **Patient selection methods**
  - Inclusion and exclusion criteria - logical, all-inclusive
- **Study design**
  - Supports objectives
  - Study location - single center vs. multicenter
  - Appropriate controls used
    - Placebo
    - Gold-standard treatment
  - Blinding (e.g., placebo)
    - Single blind vs. double blind
  - Randomization procedure used
  - Appropriate doses and duration of therapy
  - Sufficient follow-up
  - Adherence assessment (e.g., pill counts, diaries, blood levels)
  - Methods to assess adverse reactions
  - Was the study ethical?
- What were the study endpoints or outcomes?
- **F. Statistical Tests**
  - Discuss the statistical methods used
    - What was sample size?
    - How determined - what change or difference (%) were they looking for?
    - What statistical tests were used?
- **G. Results**
  - Discuss the study results
    - Review the patient demographics
    - Did they enroll the desired types of patients according to inclusion/exclusion criteria?
    - Are the patients representative of the population you may be treating (e.g., can you extrapolate these results to your patients?)?
    - Patient withdrawal description
      - Adverse effect on sample size
      - Intention to treat
    - Describe all results listed
      - Are all the study measurements reported?
      - Logical, unbiased interpretations
      - Check graphic representations closely
- **H. Discussion**
  - Objectives met; If not, why?
  - Results put in perspective to available information
  - Adequate data interpretation
  - Conclusions supported by data
  - Do authors try to extrapolate results to other populations?
  - Study limitations should be discussed

- Clinical Applicability of the results





## **Part IV: Assessment**

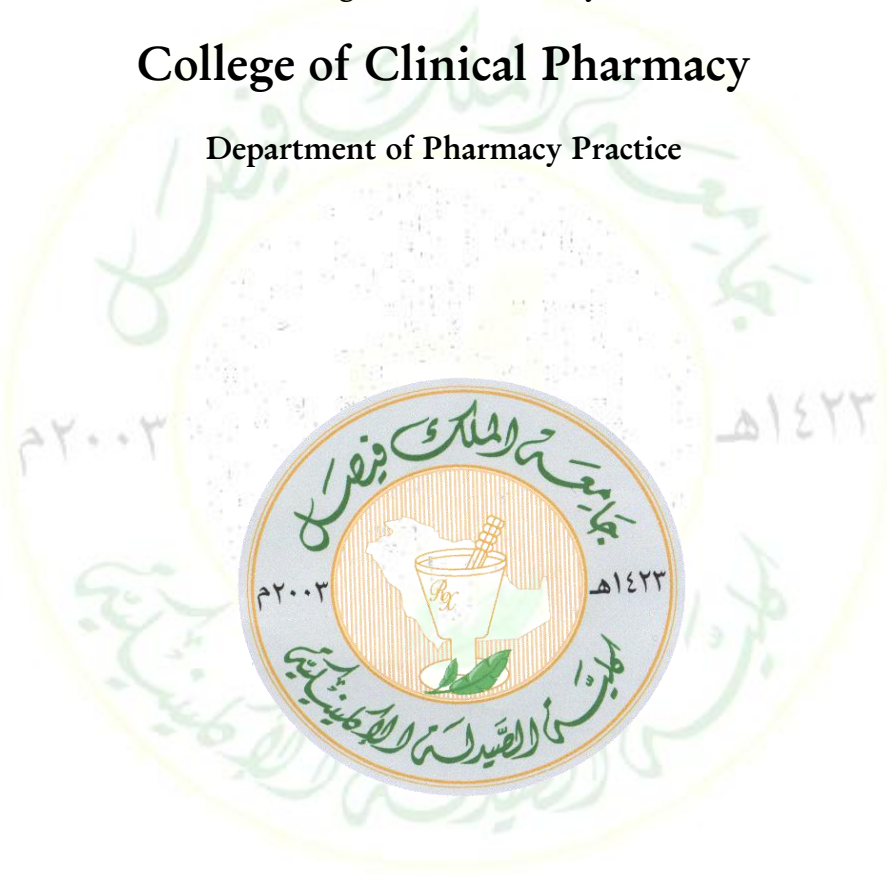


Ministry of Higher Education

King Faisal University

## College of Clinical Pharmacy

Department of Pharmacy Practice



### APPE Rotation Evaluation

Student's Name: .....

University I.D : .....

Rotation site: .....

Rotation Period with dates : .....



*Note: Please read each statement carefully and grade the student accordingly; 1: poor, 2: needs improvement, 3: good, 4: very good, 5: excellent*

<b>I. General Performance Evaluation (including professionalism)</b>		<b>50 Marks</b>				
1	Demonstrates appreciation of others' positions; attempts to identify with others' perspectives; demonstrates consideration towards others	1	2	3	4	5
2	Acts in patients' best interests; acts in accordance with the profession's and practice site's code of ethics	1	2	3	4	5
3	Clearly communicates thoughts; uses appropriate terminology and vocabulary for intended audience	1	2	3	4	5
4	Arrives at practice site on time; meets deadlines for completion of tasks and responsibilities	1	2	3	4	5
5	Maintains confidential nature of patient- and/or site-specific documents.	1	2	3	4	5
6	Demonstrates respect/regard for patients, superiors, colleagues, other personnel, and property	1	2	3	4	5
7	Holds oneself liable for tasks/duties/responsibilities for which he/she is responsible; does not blame others for mistakes or mishaps	1	2	3	4	5
8	Responds openly and positively to feedback; modifies behavior if necessary	1	2	3	4	5
9	Adheres to dress code (written or unwritten); attire is acceptable to practice setting.	1	2	3	4	5
10	Demonstrates confidence, i.e., acts and communicates in a self-assured manner, yet with modesty and humility	1	2	3	4	5
<b>Total:</b>		.	x 2:	%	<b>Grade</b>	
<b>II. Evaluation of activities of the student</b>		<b>25 Marks</b>				
1	Attends rounds and morning meeting early and regularly	1	2	3	4	5
2	The ability of obtaining and interpreting patient data from patients' history and to assess patient's condition and therapy	1	2	3	4	5
3	Demonstrate good therapy problems solving & find appropriate drug therapy alternatives	1	2	3	4	5
4	The ability to contribute in patient treatment and management plan	1	2	3	4	5
5	Demonstrate the ability to develop and implement effective patient follow-up plan	1	2	3	4	5
<b>Total:</b>		.	x 4:	%	<b>Grade</b>	

<b>III. Knowledge</b>					<b>25 Marks</b>
1	Knowledge of basic pharmacology and pharmacotherapy at entry level				
	1	2	3	4	5
2	Ability to suggest drugs with appropriate dose , route , frequency ... etc				
	1	2	3	4	5
3	Student put effort to improve knowledge and improved his performance during rotation				
	1	2	3	4	5
4	Use appropriate references ( textbooks , guidelines , primary literature ) to build up his knowledge				
	1	2	3	4	5
5	Knowledge of the student when he completed rotation				
	1	2	3	4	5
<b>Total:</b>					<b>Grade</b>
<b>IV. Case Presentation</b>					<b>50 Marks</b>
1	Describe patient data including : family history , history of present illness , chief compliant , medication history .... Etc				
	1	2	3	4	5
2	Demonstrates the ability to evaluate therapeutic plan				
	1	2	3	4	5
3	Demonstrate ability of identifying and managing drug therapy problems				
	1	2	3	4	5
4	Demonstrate ability to suggest intervention in therapeutic plan				
	1	2	3	4	5
5	Explains the rationale (pharmacokinetic, pharmacodynamics of drugs/ best evidence etc) of his suggested intervention				
	1	2	3	4	5
6	Identifying appropriate monitoring parameters				
	1	2	3	4	5
7	Mention references from standard resources				
	1	2	3	4	5
8	Presentation skills				
	1	2	3	4	5
9	Ability to handle questions				
	1	2	3	4	5
10	Stay within time limit				
	1	2	3	4	5
<b>Total:</b>					<b>Grade</b>
<b>V. Patients' Counseling</b>					<b>25 Marks</b>
1	Obtain relevant data from medical chart , medication profile or other health professional before patient counseling				
	1	2	3	4	5
2	Student always introduce himself to the patients and their families				
	1	2	3	4	5
3	Provide appropriate and accurate information				
	1	2	3	4	5

4	Use appropriate language in patient counseling				
	1	2	3	4	5
5	Assess and assure patient medications adherence				
	1	2	3	4	5
<b>Total:</b>		.	x 4:	%	<b>Grade</b>
<b>VI. Drug Information</b>					<b>25 Marks</b>
1	Obtain sufficient data needed to clarify query				
	1	2	3	4	5
2	Use appropriate sources for answering drug information question				
	1	2	3	4	5
3	Demonstrate ability of searching and critically evaluate the literature related to the request				
	1	2	3	4	5
4	Evaluates , summarizes and draws conclusion based on evidence				
	1	2	3	4	5
5	Answers the drug information question in a concise and timely manner in appropriately written format				
	1	2	3	4	5
<b>Total:</b>		_____.	_____ x 4	_____%	<b>Grade</b> _____
<b>VII. Journal Club</b>					<b>50 Marks</b>
1	Student described the study objective and hypothesis				
	1	2	3	4	5
2	Student explained the study design , statistical tests and result				
	1	2	3	4	5
3	Identify recent trials related to the study				
	1	2	3	4	5
4	Identify potential bias				
	1	2	3	4	5
5	Determine study strength and weakness				
	1	2	3	4	5
6	State the study conclusion and its validity				
	1	2	3	4	5
7	Evaluate clinical applicability of study results				
	1	2	3	4	5
8	Presentation skills				
	1	2	3	4	5
9	Ability to handle questions				
	1	2	3	4	5
10	Stay within time limit				
	1	2	3	4	5
<b>Total:</b>		.	x 2:	%	<b>Grade</b>

*Calculation of Total Marks and %age:*

I: \_\_\_\_\_ + II \_\_\_\_\_ + III \_\_\_\_\_ + IV \_\_\_\_\_ + V \_\_\_\_\_ + VI \_\_\_\_\_ + VII \_\_\_\_\_ = (Total obtained) \_\_\_\_\_

$$\%age = \frac{\text{Marks obtained}}{\text{Total Marks}} \times 100 = \underline{\hspace{2cm}} \%$$

**Conversion of %age into Grades:**

A+: 95-100%, A: 90-94%, B+: 85-89% B: 80-84% C+: 75-79%, C: 70-74%, D: 60-69%

**Final Grade:** \_\_\_\_\_

*- Specific projects or assignments completed by the student during rotation :*

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*- Strength and remarkable points of the student:*

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*- Areas which need improvement:*

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Preceptor's Name : \_\_\_\_\_ . Signature : \_\_\_\_\_ Date \_\_\_\_\_ .

Institution \_\_\_\_\_

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**Evaluation of Institutional Pharmacy Rotation**

Name \_\_\_\_\_ University # \_\_\_\_\_ Rotation \_\_\_\_\_ Site \_\_\_\_\_

Sr.#	Objectives/parameters	5	4	3	2	1
1.	Read And Interpret A Drug Order And Enter All Needed Information Into A Computer					
2.	Prepare Sterile Drug Products Using Aseptic Technique					
3.	Perform Pharmacy Calculations Accurately And In A Timely Manner					
4.	Demonstrate Knowledge Of The Drug Distribution And Work Flow					
5.	Understand Dispensing And Record Keeping Required For Controlled Substances And Poisons					
6.	Demonstrate Knowledge Of Preparation/Receipt Of Inventory Stock Orders And Emergency Drug Procurement					
7.	Review Medications For Appropriate Dating And Demonstrate Knowledge Of Procedure For Disposal Of Expired Medications					
8.	Demonstrate Knowledge of the Accreditation and Advisory Organizations Influencing Institutional Pharmacy Practice Standards					
9.	Understand The Functional Role Of The Pharmacy And Therapeutics (P & T) Committee					
10.	Understand The Process Of Reporting Adverse Drug Reactions					
11.	Observe Legal Principles And Regulatory Requirements In Practices of Pharmacy					
12.	Attend Professional Meetings Related To Healthcare					

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**Evaluation of APPE Site by Students**

Site: \_\_\_\_\_

Key: 5: Strongly agree      4: agree      3: True sometime      2: Disagree      1: Strongly disagree

Sr. #	Parameters	5	4	3	2	1
1.	I was assigned with a team of specialists for daily round					
2.	I had free access to patient medication record					
3.	I had free access to patients for interview and counseling					
4.	I was encouraged to participate in discussion regarding patient's medication					
5.	I was assigned topics for preparation and discussion regarding medication					
6.	I had free access to learning resources like library					
7.	Specialists/consultants/preceptors were sufficiently accessible					
8.	Specialists/consultants/preceptors spent sufficient time with me to guide me					
9.	Specialists/consultants stimulated problem solving through interaction					
10.	The preceptors treated me with respect					
11.	Taught me things I did not already know					
12.	Provided me with feedback on my performance					
13.	Training SITE was conducive to learning					
14.	The site provided sufficient opportunity for me to meet all the <b>General Objectives</b>					
15.	Other personnel were receptive to me					
	<b>Total 75</b>	Obtained: X				

%age:      X x 1.33 = \_\_\_\_\_

**Comments** :

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