

**Kingdom of Saudi Arabia
Ministry of Higher Education
Jazan University, College of Pharmacy**



**Internship Manual
Advanced Pharmacy Practice Experience (APPE)**

Doctor of Pharmacy (PharmD) Program

16th, 17th & 18th Level/6th Year

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SECTION-1

GENERAL INTRODUCTION

1.1 VISION AND MISSION

Vision

To provide advanced pharmaceutical care service through excellence and innovation in pharmacy education, patient care, and research.

Mission

To become a leader in pharmacy education and research that focuses on optimization of healthcare by appropriate use of drugs, as well as cost-effective provision and delivery of pharmaceutical care.

1.2 INTRODUCTION

This Internship manual of the College of Pharmacy, Jazan University, Ministry of Education, Kingdom of Saudi Arabia has been designed to guide the internship program of the PharmD students.

PharmD Internship program is an organized exposure to appropriate methods of collecting and applying clinical information concerning the effects of drugs, the identification and management of drug-related problems and application of the acquired knowledge in the promotion of rational drug therapy under the supervision of well qualified and experienced preceptors. It provides supervised clinical experiences which will give the intern numerous opportunities to gain more practical knowledge and to gain an appreciation and understanding of the concept of pharmaceutical care.

The College of Pharmacy at Jazan University provides an experiential learning environment which will assist our intern to become confident, caring and ethical pharmacy practitioners with the ability to think critically and apply their knowledge and skills in the best interest of their patients, regarding individualized pharmacotherapeutic planning, intervention and outcome evaluation. The College of Pharmacy is dedicated to the education and development of students into pharmacists who employ critical thinking skills and evidenced based knowledge in caring for their patients.

The internship helps students to strengthen their foundation of knowledge, attitudes, skills and behaviors that are necessary for the practice of pharmacy throughout their careers.

1.3 CODE OF CONDUCT

Pharmacists are health professionals who assist individuals in making the best use of medications. This code is intended to proclaim the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professions and society.

1. Relationship between the Patient and Pharmacist

Considering the patient-pharmacist relationship as a covenant means that a pharmacist has moral obligations in response to the gift of trust received from society. In return, a pharmacist promises to help individuals to achieve optimum benefit from their medications, to be committed to their welfare and to maintain their trust.

2. Dedicated Pharmaceutical care

A pharmacist places concern for the well-being of the patient at the center of professional practice. In doing so, a pharmacist considers needs by the patients as well as those defined by health science. A pharmacist is dedicated to protect the dignity of a patient. With a caring attitude and a compassionate spirit, the pharmacist focuses on serving the patient in a private and confidential manner. The pharmacist communicates with patients in understandable terms, as well as respects personal and cultural differences among patients.

3. Honesty and Integrity in Professional Relationships

A pharmacist has a duty to tell the truth and act with conviction of conscience. Pharmacists avoid discriminatory practices, behavior or work conditions that impair professional judgment and actions that compromise dedication to the best interests of the patient. Professionalism should be maintained in communications and interactions with others.

4. Professional Competence

A pharmacist has a duty to continuously update knowledge as new medications, devices and technologies become available as health technology advances.

5. Respects the Values and Abilities of Colleagues and Other Health Professionals

When appropriate, pharmacists ask for the consultation of colleagues or other health professionals or refer the patient. A pharmacist acknowledges that colleagues and other health professionals may differ in the beliefs and values they apply to the care of the patient.

1.4 GOALS AND OBJECTIVES

Goals

1. To provide adequate, and appropriate experiential knowledge to help interns to utilize the relevant resources necessary to provide direct pharmaceutical patient care centered on individualization of therapeutic evaluation and care planning.
2. To develop professionalism and interpersonal skills as a member of health care team, necessary for the provision of optimal patient care and pharmacy services.
3. Prepare PharmD students in an academic health center to be exemplary professionals who enable progress in healthcare by incorporating advances into practice and serve as medication experts.

Objectives:

After successful completion of the internship, the student will be able to perform the following:

A. Professional Support in Disease Management

1. Recommendations on drug therapy based on the best available evidences regarding:
 - a) Choice of therapy (drug/non-drug therapy)
 - b) Preferred/ideal drug(s)
 - c) Appropriate dosage (for age, body weight and co-morbid conditions) and route of administration
 - d) Treatment frequency and ideal duration of Therapy
 - e) Consultation for dosage adjustment based on response/side effects/TDM etc
2. Formulation of individualized therapeutic plan for the patients which covers:
 - a) The objectives and goals of treatment with end points of the therapy
 - b) The pharmacologic and non-pharmacologic treatment
 - c) Follow-up plan for evaluation of therapeutic outcomes and monitoring of side effects

3. Discussion of various therapeutic options for the patient with other health care providers as well as the patients themselves.
4. Discussion of different potential drug interactions (drug-disease, drug-drug, drug-food etc) prior to making recommendations on drug therapy.

B. Drug therapy monitoring and chart review

1. Identify any potential interactions, potential or existing adverse reactions, and/or treatment failures, provide assessment and recommend management approaches.
2. Review daily progress of drug therapy based upon patient disease status, relevant laboratory data, physical findings, subjective findings, and consultation with medical team.
3. Dosing of selected drugs and therapeutic monitoring of specific drug therapy.
4. Demonstrate the ability to retrieve required information from the medical record and assess patient specific information necessary for drug therapy monitoring. The intern will familiarize him/herself with regard to:
 - a) Patient Chart arrangement.
 - b) S.O.A.P notes
 - c) Medication administration record.

C. Laboratory Data Interpretation

1. Understand the significance of laboratory tests and reports which are significantly related to the monitoring and follow up evaluation of treatment response and side effects
2. Make use of the laboratory finding in formulating the individualized drug therapy plan, and identifying the drug therapy problems.

D. Drug Information Services

1. Provide drug information services utilizing the drug information resources to answer questions related to drug use and toxicity in a timely and appropriate manner.
2. Display the ability to retrieve, evidence based drug information, critically evaluate and utilize when providing answer to a question.

E. Medication Counseling

1. Provide clear and individualized instruction to patient about the medications prescribed and role of medications in order to improve the patient's understanding of the disease management and compliance.
2. Inform the patients on proper utilization of medications, storage of medications, follow up etc
3. Provide information about the expected drug effects and side effects, warn about potential drug-drug, and drug-food interactions and warning signs of dangerous side effects.

1.5 INTERN

An intern is a student who, is a registered candidate, have successfully completed and passed the qualifying examinations in all the subjects specified in the course of study up to 10th semester of the PharmD program of the Jazan University or equivalent.

General instructions

1. Interns will wear Jazan University identification card or specific identification card issued at the training site at all times while at experiential sites and should produce before the authorities when and where asked to do so.
2. All interns are bound to abide by the general rules and regulation of the training center, the Jazan University and the Ministry of Health.
3. All interns must sign an undertaking before starting the internship.
4. All interns should have completed vaccinations as per Ministry of Health guidelines.
5. Interns are obligated to respect patient privacy and maintain confidentiality at all times regarding any patient information revealed during the practice experience. Failure to follow this policy will result in a failing grade for the experience and referral to the scholastic standards committee for unprofessional conduct.
6. The interns are expected to communicate effectively and professionally at all times with all persons involved with professional training, including preceptors, other pharmacists and health care professionals, patients/patient's caregiver etc.

7. Interns shall not make professional decisions without checking with the preceptor, particularly in filling prescriptions, advising patients or health care team members about medications or treatment.
8. Interns shall be on constant alert regarding the laws and regulations which govern practice and seek clarification of any points which are not clear.
9. Each intern will be assigned a preceptor and the time and type of assignments will be decided at the discretion of the preceptor and needs to be coordinated with the preceptor's schedule.
10. Interns will be required to make presentations, submit assignments or take tests as part of their grade evaluation for the professional experience.
11. Interns are responsible for submitting all required completed evaluation forms to the Clinical Training Unit.
12. Interns should follow the schedule allotted to them at the start of the internship. All request for schedule changes needs to be approved by the Clinical Training Unit.
13. Interns experiencing problems/conflicts during the internship should discuss his/her concerns with the preceptor as soon as possible. If the concerns are not adequately addressed by the preceptor, the intern should then contact the Clinical Training Unit.
14. Interns who receive grades below a D for an internship should repeat the internship. In this scenario, repeated clerkships will not be done at the same site. This will be determined on a case-by-case basis by the Clinical Training Unit or the Vice Dean, Academic Affairs.

Absence during internship

1. Interns are eligible for 10 days annual leave and 2 weeks of maternity leave.
2. Absence can avail a maximum of 5 days in a rotation so as not to impact the learning experience or jeopardize the final grade.
3. Interns are required to notify the preceptor as soon as possible of any required educational absences (maximum of 3 days during internship for seminars/CME) or emergency absences (maximum of 5 days during internship).
4. The intern may be required to compensate for the missed days, if the days of absence exceeds the number of permissible days of absence.
5. Unexcused absences of more than 5 days may result in a failing grade and referral to the scholastic standards committee for unprofessional conduct.

Activities during rotation

1. Sign the internship attendance register maintained by the preceptor or the pharmacy in charge at the rotation site.
2. During the internships, the interns are required to actively participate in patient care as outlined below:
 - i. Attend daily rounds and morning meetings with the assigned medical team.
 - ii. Monitor patients assigned by his/her preceptor.
 - iii. Meet your preceptor daily for any potential discussion which may include:
 - a. Giving informal daily oral case summary presentation of assigned patients.
 - b. Give SOAP note presentation for selected patients
 - c. Providing daily updates on patients you have been following with focus on any drug therapy problems.
 - d. Reading materials provided by your preceptor
3. Conduct patient interviews to obtain patient history including medical and drug histories with the consent of the preceptor. Perform follow up of patients at any given time with the permission of the preceptor.
4. Provide patient education about their medication and disease management on regular basis
5. Provide patient counseling as instructed by the preceptor.
6. Prepare a detailed pharmaceutical care plan for patients assigned by the preceptor
7. Conduct drug consultation with the support of the preceptor.
8. At least one Journal club presentation or Seminar per rotation.
9. Attend meetings, seminars and discussions as per schedule given by the preceptor.
10. Attend all other activities as scheduled by the preceptors, other than the above mentioned.
11. Intern should make efforts to meet the rotation specific learning objectives as described in the Internship manual under the supervision of the preceptor.

1.6 PRECEPTOR

Preceptor is a qualified professional to observe and judge all aspects of a student's academic performance, including demonstrated knowledge, technical and interpersonal skills, attitudes and

professional character, as well as the ability to utilize the required curriculum. Preceptors are selected by the Dean, College of Pharmacy, Jazan University.

Duties and responsibilities

1. All preceptors must carry their identification card while at experiential sites and should produce before the authorities when and where asked to do so.
2. All interns are bound to abide by the general rules and regulation of the training center, the Jazan University and the Ministry of Health.
3. Preceptors will promote and practice principles of professionalism, ethical behavior and compassionate patient care.
4. Preceptors will discuss in detail what is expected of a student in the way of appearance, attitude and method of practice and ensure that both he/she (the faculty preceptor) and co-workers adhere to these requirements.
5. Preceptors will afford the student with mutual respect and patience needed for an optimal learning experience.
6. Preceptors will work with the student to ensure that optimal learning experiences are provided, will strive to stimulate the student's interest in all aspects of professional practice and that the student's goals and objectives are met at the site.
7. Preceptors will submit all evaluation forms and reports required by the program in a timely manner.
8. Preceptors will decide the best assignment to be used as the make-up for missed experiential time.
9. At the beginning of the rotation, communicate with students about expectations of internship and standards of evaluation.
10. Orient the students about the laws and regulations of the training site and discipline and ethics of the professional practice.
11. Delegate to students, his/her defined duties, with appropriate supervision and direction, but never use students as substitution for regular staff.
12. Maintain proper attendance of students to make it sure that students observe punctuality of time (daily attendance, medical team rounds and any other clinical activities).
13. Determine student's competency based on his/her daily performances and through frequent discussions with students and help their concerns.

14. Respect confidentiality of student's internship information.
15. Available at reasonable times for teaching and evaluation of the students.
16. Communicate with the internship supervisor directly or through the coordinators for the progress of student's internship or any circumstances.

1.7 COURSE DESCRIPTION

Internship is defined as the clinical and hospital training of pharmacy students following successful passing of the college graduation requirements. This period is a component of the study of pharmacy and last for one academic year. The interns are not considered eligible for the practice of pharmacy unless they successfully pass the internship training in affiliated or approved teaching hospitals and/or approved training location

Course Periods

1. The internship experience is made up of 8 rotations of 6 weeks each during the mandatory 48 weeks of training. Six rotations of the internship are compulsory rotations and remaining 2 rotations are elective that can be chosen from different specialties.
2. The first day of each internship course will be used to provide orientation and details about the contents with the students, supervisors and preceptors.
3. The last day of each internship course will be used for presentation and evaluation by the preceptor.

Training Sites:

1. Training sites are allotted based on
 - a) Availability of a preceptor in the discipline.
 - b) Readiness of the training site to offer training and supervision of the intern.
 - c) Acceptance letter from the internship supervisor.
2. Major part of internship training should be done in teaching hospital including university hospitals the remaining period can be in the community pharmacy or primary health centers and or any other approved training site.
3. All rotations should be supervised by academic departments.

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

Internship rotation

APPE-Advanced Pharmacy Practice Experience

<i>Code</i>	<i>Internship Title</i>	<i>Contact hrs/week</i>	<i>Credit hrs/week</i>	<i>Total period (weeks)</i>
Compulsory Rotations				
PHCL-651	APPE-1 Advanced Community Pharmacy	40	4	6
PHCL-652	APPE-2 Advanced Hospital Pharmacy	40	4	6
PHCL-653	APPE-3 Ambulatory Care (any one is compulsory)			
	Diabetes Ambulatory Care	40	4	6
	Respiratory Ambulatory Care	40	4	6
	Rheumatology Ambulatory Care	40	4	6
	Neuroscience/Epilepsy Ambulatory Care	40	4	6
	Anticoagulation Ambulatory Care	40	4	6
PHCL-654	APPE-4 Inpatient General Medicine-1	40	4	6
PHCL-655	APPE-5 Inpatient General Medicine-2	40	4	6
Elective Rotations (Any 2 from those listed below)*				
PHCL-656-657	APPE- 6 and 7 Elective			
	Endocrinology	40	4	6
	Respiratory	40	4	6
	Gastroenterology	40	4	6
	Nephrology	40	4	6
	Cardiology	40	4	6
	Neurology	40	4	6
	Emergency Medicine	40	4	6
	Intensive Care Unit (ICU)	40	4	6
	Infectious diseases	40	4	6
	Hematology	40	4	6
	Oncology	40	4	6
	Psychiatry	40	4	6
	Obstetrics & Gynecology	40	4	6
	Pediatrics	40	4	6
	DPIC/TDM/TPN/Inventory Control	40	4	6
PHCL-658	APPE-8 Research Practice Experience (Compulsory)	40	4	6

Selection of rotations

1. An intern should undergo 4 credit hours (1 credit =10 contact hours) during a week (5 days /week) of rotation.
2. 6 rotations are compulsory. The intern should compulsorily take APPE-1, 2, 3, 4, 5, and 8. If more than one option available in any APPE in compulsory rotation, then choose any one from each APPE.
3. Students are also required to take 2 rotations from electives other than the selected compulsory rotations. An intern may also choose a rotation from the compulsory rotation (if not opted under compulsory rotation) as elective rotation.
4. An intern should successfully complete total 8 rotations (32 credits) during a period of 48 weeks to complete the internship.
5. Not all elective rotations are offered in every site. Particular elective rotations are offered depending upon the expertise available at the site, availability of the preceptor and interest of students.
6. A Course syllabus for each of these rotations is described in detail in **section-2**.

Training Institutions: Training of intern is undertaken in affiliated teaching hospitals or in any other hospitals or centers recognized by the College of Pharmacy.

Journal club: Each training site shall conduct at least one journal club meeting in each rotation to motivate the intern in journal reading and critical study of the articles.

Commencement of the Training:

1. The interns are allowed to start training after obtaining a letter from the Dean, college of Pharmacy, Jazan University, documenting that he/she finished the graduation requirements.
2. He/she can then start internship following the coordination with the Head of pharmacy Practice training unit followed by agreement of Vice Dean for Academic Affairs.
3. Generally, Changes in the internship schedules are not allowed after the distribution of the timetable to various disciplines. But it may be permitted in exceptional cases or in emergency situations where there is a replacement and agreement of departments concerned.

Delay/Discontinuation of the training:

1. The intern will not be allowed to start training program later than scheduled time normally.

2. If the delay/discontinuation is due to valid reasons (approved by the authorities) he/she will continue training and the duration of delay/halt shall be compensated to complete the internship.
3. An intern will be declared to have completed the internship only if he/she undergoes the rotation for the prescribed time in each rotation.
4. An intern is allowed to start a new rotation only after successful completion of the current rotation.

Holidays:

1. During the internship Fridays and Saturdays will remain as off days.
2. Interns are given 2 weeks of holidays each for Ramadan and for Haj.

Absence/Leave:

1. Interns are eligible for maximum of 10 days annual leave and 2 weeks of maternity leave.
2. Interns are responsible for adhering to the schedule. Absence for reasons other than emergency purposes is discouraged and should be kept to a minimum during the experience in order not to impact the learning experience or jeopardize the final grade.
3. Interns are required to notify the preceptor as soon as possible of any required absences (e.g., Seminars, CME etc.).
4. Students are allowed to attend one conference during the internship year and if their absence exceeds permissible limits, conference excuse will not be accepted.
5. Details of absence are provided in Intern section of the manual. ([Details](#))

1.8 EVALUATION AND GRADING

Evaluation Protocols:

1. The total marks for each of the internship shall be one hundred (100).
2. The intern will be evaluated at end of each rotation for forty (40) marks by each preceptor on the basis of his/her attendance, punctuality, professionalism and attitude (Appendix-E)
3. The intern will be evaluated at the end of each rotation by the preceptor or a panel of examiners appointed by the Vice Dean, Academic Affairs. The maximum mark for the final evaluation is sixty (60). The final evaluation may be based on completed competencies/activities during the internship, presentation and/or viva or a combination of

these methods. The evaluation criteria in final evaluation may be specific for certain rotations as specified in evaluation forms in Appendix-E

4. The preceptor should consolidate the marks of each intern and submit to the coordinator of the training unit through the online link provided to them.
5. The coordinator shall consolidate the marks from the preceptors for each student.

Summary of Marks per Rotation

Continuous Evaluation

Students' Personal assessment (Professionalism, punctuality etc.) – 40 Marks

Final Evaluation

Final Evaluation (Competencies/activities and/or Presentation and/or viva) – 60 Marks

Grand Total:

The grand total of marks for each Advanced Pharmacy Practice Experience (each rotation) shall be the sum of continuous evaluation and final Evaluation (40+60 =100 Marks).

6. The final score will be interpreted as per the Jazan University grading system.

Grade Letter	Grade	Percentage
A+	High excellent	95-100
A	Excellent	90-< 95
B+	High very good	85-<90
B	Very good	80-<85
C+	High good	75-<80
C	Good	70-<75
D+	High Pass	65-<70
D	Pass	60-<65

7. Students who have completed their PharmD course of study from College of Pharmacy, Jazan University can take internship in any university in Saudi Arabia approved by Ministry of Higher Education, Saudi Arabia.
8. Students who have completed their PharmD course of study from College of Pharmacy, Jazan University and have completed their PharmD course internship in other universities should submit the evaluation report in sealed envelope from the University where they have undergone internship.

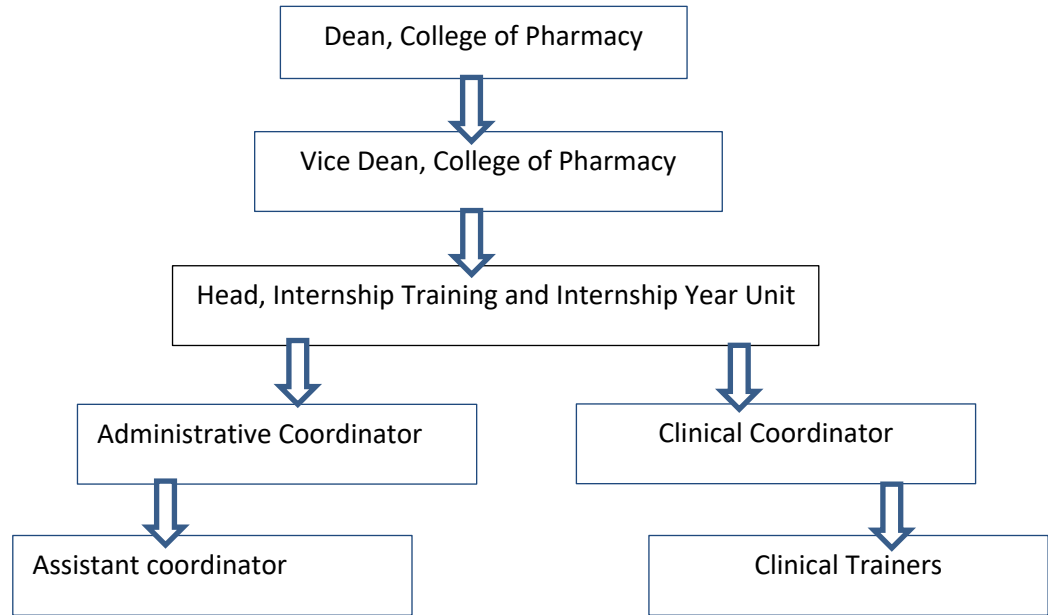
9. Students who have completed their PharmD course of study from College of Pharmacy, Jazan University and have completed their PharmD course internship in other universities, the Final grade will be awarded after finalizing the equivalency with the grade obtained in other university with that of the Jazan University.

1.9 INTERNSHIP CALENDER

All internship schedules will be in accordance with the calendar prepared from time to time by the college of pharmacy Jazan University to cover the 48 weeks rotation as per the curriculum.

Important: In all the matters, the decision of the Dean, College of Pharmacy, Jazan University shall be final and binding to all involved in the clinical training program.

Organizational Structure of the Clinical Training and Internship Year Unit



SECTION-2

SYLLABUS FOR ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

General Learning Outcomes

All of the required advanced pharmacy practice experiences will have the intern involved with direct patient care activities and in settings that can offer it, a continuity of care practice. However, some elective are in unique health care settings that teach many of the learning objectives. In aggregate, all of the learning objectives are achieved through a variety of healthcare settings and experiences.

Graduates of the Jazan University, Doctor of Pharmacy Program will be able to provide patient-centered and population-based care in a variety of practice settings.

Upon completion of the professional program graduates will be able to:

1. Apply fundamental scientific, analytic and problem-solving skills to all areas of pharmacy practice
2. Communicate effectively both orally and written in a variety of settings.
3. Work collaboratively along with the healthcare teams.
4. Patient care/practice decisions based on sound science and best evidence.
5. Apply medication safety and quality-improvement principles to pharmacy practice.
6. Manage medication-use systems.
7. Promote public health and wellness.
8. Develop behaviors to practice in an ethical, culturally aware and professional manner
9. Demonstrate a commitment to continuous professional development

2.1.0 APPE-1 ADVANCED COMMUNITY PHARMACY– PHCL 651

In this rotation the intern is expected to learn the different types of community pharmacy including community independent and community chain pharmacy and community pharmacy services in primary health centers. He/she will be able to actually observe the difference between pharmacy practice in hospital setting and community setting. Intern will gain experience in the procedures, policies and laws pertaining to community pharmacy practice.

He/she will be able to discuss ethical decisions in pharmacy practice such as patient confidentiality, emergency situations etc., and to demonstrate a convincing knowledge of drug available in pharmacy market (Trade/Generic names, doses, indications, contraindications, patient instructions, administration, etc. He/She will be able to read, interpret, process patient prescriptions correctly and calculate the number of doses and dosage units required to complete the therapy.

Learning Objectives

1. Each intern must complete all of the following activities for the community pharmacy rotation:
2. Attend 6 working hours in a specific community pharmacy site 5 days a week, for 4 weeks.
3. Actively participate in preparing, processing and dispensing prescriptions.
4. Take part or provide patient counseling on prescription drugs, only with the supervision of the preceptor.
5. Recognize the generic/trade names, doses, dosage forms available, indications, contraindications, precautions, drug-drug interactions, drug-food, and drug-disease interactions for the most commonly prescribed items in the community pharmacy.
6. Utilize computer system available in the pharmacy.

Recommended references:

1. Pharmacy Practice. Kevin Taylor and Geoffrey Harding (Editors). Published by Taylor and Francis. 2005
2. Developing Pharmacy Practice (Handbook). Karin Wledenmayer, Rob Summers et al (Editors). WHO 2006
3. Pharmaceutical Care Practice: The Patient-Centered Approach to Medication Management Services. Cipolle. 3rd edition. 2012

2.2.0 ADVANCED HOSPITAL PHARMACY – PHCL 652

The aim of the hospital pharmacy internship is to provide the intern with experience in pharmacy administration, unit dose system and dispensing of medications in hospital pharmacy. In this rotation, the intern is expected to learn the processes and functions carried in the inpatient and outpatient pharmacy. He/She will understand how to processes and check medication orders. Intern will have opportunity to see the difference between centralized and decentralized pharmacy services. He/She will be able to learn how pharmaceutical preparations including extemporaneous pharmaceuticals are prepared, drug inventory control, drug orders, unit dose system and ward stock items are major functions to be understood by the intern. Also, the intern will learn the different pharmacy computer systems utilized in a hospital setting. In addition, He/ She will learn how intravenous (IV) solutions are prescribed, calculated and prepared, including IV admixtures and total parental nutrition (TPN).

Rotation Specific Learning objectives:

1. Understand and outline the role of the pharmacy department in health care in Saudi Arabia.
2. Understand the role and function of various pharmacy staff
3. Understand the functioning of various units of pharmacy like in-patient pharmacy, out-patient pharmacy, narcotic pharmacy, compounding pharmacy and IV room.
4. Understand and demonstrate ability to perform basic pharmacy operations like receiving and processing of medication orders, pharmaceutical dispensing, & basic patient counseling.
5. Familiarize the flow of the IV orders (TDM, and TPN orders if available), and the labeling and checking of the finished product.
6. Understand and familiarize with processing of unit dose systems, handling of near expiry medications, disposal of expired medications, and handling of high alert medications.
7. Demonstrate and understand different medication administration in hospital settings including medication records handling, control of narcotic drug log sheets, record keeping and injectable administration.
8. Understand principles of sterile compounding and demonstrate skills to prepare sterile compounds by applying aseptic techniques, perform calculations necessary for compounding.
9. Observe and understand the role of clinical services provided by the pharmacy like drug therapy management including dosing, pharmacotherapy interventions and recommendations, medication reconciliation, patient education and counseling at discharge.
10. Apply the various drugs information sources available to support the evaluation and comparison of therapies and the optimization of drug therapy in individual patients.

11. Understand pharmacy policies and procedures in the healthcare setting (e.g., the formulary management system, clinical practice guidelines and the application of technology innovation in drug distribution and drug information).
12. Understand the general principles and procedures of medication error reporting.
13. Utilize and familiarize with use of Medicalplus or other systems used for patient data entry, drug ordering and overall drug control and understand the need of complete patient data base.
14. Familiarize with Automatic - drug - stop order.
15. Understand the different mechanism used for inventory control, how to order out of stock items and the methods used to maintain inpatient inventory.
16. Understand the functional role of The Pharmacy and Therapeutics Committee and other professional committees in the hospital.
17. Describe the best methods used for communicating with fellow workers and other health care providers such as medical doctor, patients, nurses, etc. These include proper patient consultations and instruction for safe and effective drug use.
18. Have actual hands on experience in making extemporaneous pharmaceutical preparations.
19. Understand the common medications used in primary care settings, identify their drug classes and list indications for use and all the relevant information.
20. Learn and understand about adverse drug reaction and drug interactions reporting.

Recommended references:

1. Pharmacy Practice. Kevin Taylor and Geoffrey Harding (Editors). Published by Taylor and Francis. 2005
2. Developing Pharmacy Practice (Handbook). Karin Wledenmayer, Rob Summers et al (Editors). WHO 2006
3. Pharmaceutical Care Practice: The Patient-Centered Approach to Medication Management Services. Cipolle. 3rd edition. 2012
4. Community and Clinical Pharmacy Services: A Step-by-Step Approach. Ellis. 2013

2.3.0 APPE-3 AMBULATORY CARE-PHCL 653

This internship aims to prepare the intern with a knowledge base and problem solving skills relating to the management of patients with ambulatory care problems with pharmaceutical care perspective.

Learning Objectives:

1. Interview patient/caregiver to obtain information relevant to the patient's care (for example, chief complaint, history of present illness).
2. Reconcile medications based on information obtained from patient/caregiver interview, patient's healthcare provider, patient's documented medication profiles and medical records
3. Assess patient's self-management knowledge, understanding, skills and willingness and ability to actively participate in his/her own care.
4. Assess benefits and risks of drug therapy for patients considering concomitant disease states, other medication and other patient specific factors.
5. Assess the available information to identify drug related problems (e.g. no drug, wrong drug, wrong dose, side effects, and drug interactions) and response to therapy.
6. Actively participate as a health care provider (i.e., direct patient care, consultation with patients or their health care providers or by written communication).

The student can select Diabetes, Respiratory, Rheumatology, Neurology or Anticoagulation as an Ambulatory Care service rotation.

2.4.1 DIABETES: Students opting diabetes should develop skills to monitor treatment response, side effects of insulin and oral agents and adjust the dose of insulin and oral hypoglycemic according to the lab data. They should be able to provide appropriate patient counseling and educate them about diet and life style modifications, method of administration of insulin, identification of side effects and emergency steps to minimize severity of treatment related complications.

2.4.2 RESPIRATORY DISEASES: Students opting respiratory diseases should be familiar with management of tuberculosis and other common respiratory diseases, monitoring of the treatment response, toxicity and compliance. They should be able to provide appropriate patient counseling and educate them about diet and life style modifications, method of administration of antitubercular, identification of side effects and emergency steps to minimize severity of treatment related complications.

2.4.3 RHEUMATOLOGY: Students opting for rheumatology should be able to familiarize with management and monitoring treatment of rheumatoid arthritis, osteoarthritis, osteoporosis and other rheumatological disorders.

2.4.4 NEUROLOGY: The clinical rotation in Ambulatory Neuroscience is designed to provide the intern with an opportunity to develop professional skills in dealing with direct outpatient care in neuroscience clinic. Students choosing for neurology should become familiar with management and monitoring treatment neuroscience conditions such as Epilepsy, Parkinson's disease, multiple sclerosis, Alzheimer's disease, motor neuron disease, myasthenia gravis, sleep disorders, peripheral neuropathies, stroke, trigeminal neuralgia, headache etc.

2.4.5 ANTICOAGULATION: The clinical rotation in Ambulatory Anticoagulation Service is designed to provide the intern with an opportunity to gain experience in outpatient anticoagulation services provide at the ambulatory anticoagulation clinic.

Students opting anticoagulation clinic should be able to design, recommend, monitor and evaluate patient-specific anticoagulation therapeutic regimens based on the principles of evidence-based medicine. They should be able to analyze all patient-specific anticoagulation-related information required to prevent, detect, and resolve anticoagulation-related problems and to make appropriate recommendations. Evaluate anticoagulation regimens for appropriateness of indication, dose, dosage form, duration, schedule, route of administration, method of administration etc.

Recommended references:

1. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA. 10th Edition
2. Pharmacotherapy: A pathophysiologic Approach. Joseph T Dipiro. 9th Edition. McGraw Hill.
3. Pharmacotherapy: Principles and Practice– 4th Edition. Chisholm-Burns et al. McGraw Hill.
4. CURRENT Practice Guidelines in Primary Care, Esherick. 2016

2.4.0 APPE-4/5 INPATIENT GENERAL MEDICINE 1/2 PHCL 654/655

The internal medicine internship is most important clinical rotation and is intended to enrich the knowledge base and develop problem-solving skills in relation to the patient management in internal medicine from a pharmaceutical care perspective. The Internal medicine posting plays an important in overall development of critical thinking skills, the ability to evaluate a patient's medical information, identify and solve drug therapy problems, developing skills in designing drug therapy interventions and professionally communicating recommendations to other respective health care professionals.

Learning objectives:

The intern should be able to:-

1. Apply the pharmaceutical care process in management of various disease conditions.
2. Obtain a complete medication history from patients admitted to the medical wards.
3. Develop appropriate assessment and plan from the information obtained in the medication history.
4. Assess the significance of pharmacokinetic parameters of the patient for determining the appropriateness of the drug therapy.
5. Apply appropriate knowledge of pharmaceutical properties of the drugs when evaluating therapeutic regimens.
6. Application of relevant pharmaceutical principles when evaluating therapeutic problems such as dosage adjustment or regimen modification in the presence of renal or liver dysfunction or other diseases affecting drug dosing.
7. Communicate recommendations regarding therapeutic interventions to other members of the health care team in an effective and assertive manner.
8. Demonstrate the ability to influence therapy outcomes by bringing to the medical team's attention:
 - a. The appropriateness of: choice of the drug; choice of the dose and dosage form; choice of the schedule and the route of administration.
 - b. The necessity of all the drugs prescribed.
 - c. Possible side effects or adverse reactions; drug-drug interactions; drug-laboratory test interactions; drug-food interactions; contraindications or cautions
 - d. Management of adverse reactions or drug interactions
 - e. Alternative drug treatment or regimens

- f. Therapeutic controversies involving given drug regimens
9. Identify, detect, or predict problems concerning drug therapy including inappropriate choice of drug, dosage form, route of administration or dosing schedule, duplication of drugs, clinically significant drug-drug, drug-disease, drug-food and drug-lab results interactions and related adverse drug reactions.
10. Provide adequate documentation and literature support for therapeutic recommendations
11. Provide appropriate monitoring parameters for the chosen treatment plan (including efficacy, toxicity, side effects and potential drug interactions).
12. Effectively and appropriately, communicate the drug treatment plan to the patient with appropriate counseling of the patient with regard to the appropriate use of medications, precautions and expectations.
13. Demonstrate the ability to read a medication chart in order to effectively monitor drug therapy.
14. Monitor patients' progress with regard to the therapeutic objectives to achieve the outcomes of the pharmaceutical care plan.
15. Demonstrate an advanced degree of skill and proficiency in providing clinically significant drug information regarding drug therapy when requested or when it is appropriate for better patient care.
16. Make case presentations, seminars or journal clubs as directed by the preceptor
17. All activities in compliance with the rules, regulations and ethics of the hospital.

Recommended references:

1. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA. 10th Edition
2. Pharmacotherapy: A pathophysiologic Approach. Joseph T Dipiro. 9th Edition. McGraw Hill.
3. Pharmacotherapy: Principles and Practice– 4th Edition. Chisholm-Burns et al. McGraw Hill.
4. CURRENT Practice Guidelines in Primary Care, Esherick. 2016

2.5.0 APPE 6 & 7 *ELECTIVE: PHCL 656, 657

The internship in specialties in internal medicine are intended to enrich the knowledge base and develop problem-solving skills in relation to the patient management in specialties like endocrinology, gastroenterology, pulmonary medicine, nephrology, cardiology, neurology and emergency medicine from a pharmaceutical care perspective.

Learning Objectives:

The intern should perform all duties as clinical pharmacist like

1. Obtain a complete drug history from all patients admitted to the respective specialty and from selected patients on the consultation service.
2. Identify any drug-related problems (e.g., compliance, interactions, allergies, idiosyncratic reactions) which should be brought to the attention of the appropriate member of the health care team.
3. Coordinates activities with the responsible staff pharmacist.
4. Daily patient medication review, identification of drug-related problems and appropriately communicate that information to the responsible resident.
5. Coordinate efforts with the resident(s) in the specialty and staff pharmacists to instruct/educate/counsel patients about their medications.
6. Actively participate in the drug decision-making process with the team of health care professionals.
7. Design pharmaceutical care plans (with therapeutic regimens, monitoring parameters and therapeutic endpoints) for patients.
8. Communicate the treatment plan with patient.
9. Monitor drug dosing, adverse events, drug interactions and recommend changes in drug therapy when appropriate.
10. Evaluate the prescriptions and treatment plan for treating the most common types in the specialty.
11. Familiarize with the commonly practiced pharmacotherapeutic practice guidelines which are based on evidence based medicine.

2.5.1 ENDOCRINOLOGY:

Interns should develop skills in management of endocrine diseases, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring.

Interns should develop skills in management of endocrine diseases, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring. Intern should familiarize themselves with Diabetes mellitus, Thyroid, adrenal gland dysfunction, the medications for management, adverse effects, prevention, management of adverse effects, identification of potential drug interactions, non-pharmacological management and diabetic patient counseling and education.

2.5.2 RESPIRATORY/PULMONARY MEDICINE:

Interns should develop skills in management of respiratory diseases, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring.

Intern should familiarize themselves with management of Bronchial asthma, COPD, Chest infections, evidence based practice guidelines, monitoring of response and adverse effects.

2.5.3 GASTROENTEROLOGY:

Interns should develop skills in management of diseases of gastrointestinal system, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring.

Intern should familiarize themselves with management of Peptic ulcer disease, IBD, IBS, Constipation, diarrheal diseases, hepatic disorders including cirrhosis and viral hepatitis, and pancreatitis, the medications used, evidence-based practice guidelines, monitoring of response and adverse effects.

2.5.4 NEPHROLOGY:

Interns should develop skills in management of diseases of kidney, being an active member of team of health professionals, taking part in therapeutic decision making, its application and monitoring.

1. Intern should familiarize themselves with developing management plan for acute and chronic failure, monitor the effectiveness and toxicity of all the medications eliminated by the renal system in all patients having renal impairment and patients on dialysis. Recommend necessary changes when appropriate.

2. Develop appropriate drug monitoring plans for medications in patients on dialysis.

3. Familiarize with immune modulating drugs used in renal transplant patients, side effects, complications and monitoring methods for these drugs, use of Erythropoiesis-Stimulating Agents (ESAs) in chronic kidney disease, antibiotic therapy for kidney infections (pyelonephritis) and pharmacotherapeutic management of renal stone disease.

2.5.5 CARDIOLOGY

The cardiology internship aims to prepare the intern with a knowledge base and problem solving skills relating to the management of patients with common cardiovascular problems with pharmaceutical care perspective.

Intern should familiarize themselves with management of angina pectoris, Myocardial infarction, hypertension, heart failure, cardiac arrhythmias, hyperlipidemia, and cardiac arrest (including code blue) along with the medications used, its side effects, monitoring of efficacy and side effects, specific drug-drug, drug-disease interactions etc.

2.5.6 NEUROLOGY

The neurology internship aims to prepare the intern with a knowledge base and problem solving skills relating to the management of patients with common neurological problems with pharmaceutical care perspective.

Intern should familiarize themselves with management of epilepsy disorders, Parkinson's disease, stroke, dementia disorders, head ache, neuropathic pain etc and the medications used, side effects and monitoring of efficacy and toxicity.

2.5.7 EMERGENCY MEDICINE

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

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

Ensure the delivery of the right medication to right patient in emergency care.

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

emergency drugs such as inotropics, dextrose 50% in the Crash Cart and be able to discuss drug therapy used in CPR.

2.5.8 INTENSIVE CARE UNIT - ICU

The aim of this internship is to prepare the intern with knowledge base and problem solving skills relating to the management of critically ill patients from a pharmaceutical care perspective.

The intern should be able to design, recommend and implement therapeutic regimens for a critically ill patient utilizing patient-specific data and best available evidence, establish and prioritize patient-specific therapeutic goals and plans for a critically ill patient, identify and prioritize current or potential patient-specific medical, medication and nutrition-related problems, design and recommend appropriate monitoring plan.

2.5.9 INFECTIOUS DISEASES

The aim of this rotation is to enable the intern to acquire proficiency in problem solving skills and develop a knowledge base, essential, for the treatment of infectious diseases by use of appropriate antimicrobial agents, keeping pharmaceutical care in perspective.

1. Describe the etiology, incidence, pathophysiology, clinical course, complications of common, and some rare infectious diseases. The intern shall be well versed with designing of anti-infective therapies/ medication and reasonable investigational methods employed before selection of proper anti-microbial agents used for the treatment of infectious diseases.
2. Interns should familiarize with uses, specific guidelines, monitoring parameters, dosing specifications of various antimicrobials available along with therapeutic endpoints necessary for the completion of anti-infective regimens for various infectious diseases.

2.5.10 HEMATOLOGY

The aim of this internship will provide the intern with the opportunity to develop skills in therapeutic management of hematological disorder patients and patients with hematological cancers and provide the patients with pharmaceutical as well as supportive care. The purpose of this internship is to integrate the pathophysiologic abnormalities of disease associated with hematological disorders with concepts of drug action and therapy.

Learning Objectives:

1. Familiarize, observe and monitor treatment protocols, signs and symptoms, clinical manifestations of various hematological conditions,
2. Understand individualization of drug therapy by applying pharmacokinetics & pharmacodynamics principles and dose calculations by body surface area.
3. Identify problems concerning drug therapy including inappropriate choice of drug, dosage form, route of administration or dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
4. Demonstrate the ability to read a chart in order to effectively monitor drug therapy.

2.5.11 ONCOLOGY

The aim of this internship will provide the intern with the opportunity to develop skills in therapeutic management of various cancers and provide the patients with pharmaceutical as well as supportive care. The purpose of this internship is to integrate the pathophysiologic abnormalities of disease associated with cancers with concepts of drug action and therapy. The state of the art pharmacotherapy will be reviewed with pertinent pathophysiology, pharmacology, pharmaceuticals, medicinal chemistry, drug –drug interaction, alternative medicine and clinical pharmacy skills. Emphasis will be placed on drug selection, dosing regimen design and therapeutic drug monitoring (TDM) to assess the attainment of therapeutic efficacy and avoidance of adverse reactions, in the context of drugs related problems (DRPs).

Learning Objectives:

1. Familiarize, observe and monitor treatment protocols, signs and symptoms, clinical manifestations of various hematological and oncology disease conditions,
2. Understand individualization of chemotherapy by applying pharmacokinetics & pharmacodynamics principles and dose calculations by body surface area.
3. Identify problems concerning drug therapy including inappropriate choice of drug, dosage form, route of administration or dosing schedule, duplication of drugs, drug interactions, contraindications and adverse drug reactions.
4. Be able to develop a rational and complete treatment plan for all acute medical problems in assigned patients. This includes the ability to monitor drug therapy using a problem-based format which includes: a problem list, goals of therapy, treatment plan and appropriate monitoring parameters.

5. Explain the mechanism of action, pharmacological effects, indications, side effects and contraindications of chemotherapeutic drugs used in treatment of cancers.
6. Know the toxicology of the drugs used in the treatment of cancers and its management.
7. Demonstrate the ability to properly counsel patients about the appropriate use of their prescription and non-prescription medications.
8. Counsel patients regarding their chemotherapy as to side effects, management of those side effects and self-monitoring techniques.

2.5.12 PSYCHIATRY

The goal of this internship is to get an in depth understanding of various drug related problems encountered in psychiatric therapy. This is also to prepare and train the intern to interact effectively with the patients having psychiatric disorders and to understand and evaluate the care and support they need to sustain themselves with regard to their day to day activities and requirements.

Devise and justify appropriate recommendations for initiation and maintenance of drug therapy for psychiatric illness, Identify and utilize parameters for monitoring therapeutic efficacy and adverse effects of psychiatric medications.

2.5.13 OBSTETRICS & GYNECOLOGY

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

- 1 Identify and master different pharmacotherapeutic modalities used in reproductive system disorders, gynecological and obstetrics pharmacotherapy.
- 2 Understand the problem solving process to determine the risk vs. benefit of using drug therapy during pregnancy and lactation.
- 3 Describe the standard medical care required/ provided during pregnancy and its importance for the expectant mother and child.
- 4 Design a pharmaceutical care plan for patients with pregnancy or other gynecological abnormalities.

2.5.14 PEDIATRICS

The goal of this rotation is to provide an intern with an advanced clinical experience that will further broaden his knowledge base & skills in understanding various issues related to the children's health. This rotation will help to improve their clinical skills in planning the most suitable, safe and effective pharmacotherapeutic regimens in the pediatric population.

Learning Objectives:

1. Interns should familiarize with identification of problems concerning drug therapy with reference to appropriateness of choice of drugs, dosage forms, drug administration schedule and duplication of drugs, drug-drug interactions, contraindications for the use of those agents and adverse drug reactions.
2. They should be able to develop a therapeutic plan for pediatric population, calculation of pediatric dosage based on per kilo body weight, body surface area and other treatment related issues with specific precautions to avoid / prevent the risk of an overdose and undesired side effects.
3. Monitor drug therapy appropriately including rationale, efficacy, therapeutic endpoints, drug interactions and potential adverse drug reactions expected in pediatric population.
4. Understand the factors with relation to drug and patients, which can affect the biopharmaceutics, pharmacodynamics and pharmacokinetic properties of medications used in the management of pediatric diseases.
5. Shall be able to calculate and design the pediatric dosing protocols and regimens independently.
6. Discuss the latest guidelines on evidence-based therapy while evaluating the therapeutic care plan and choice of drugs used in pediatric population.

Recommended references:

1. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA. 10th Edition
2. Pharmacotherapy: A pathophysiologic Approach. Joseph T Dipiro. 9th Edition. McGraw Hill.
3. CURRENT Practice Guidelines in Primary Care, Esherick. 2016

2.5.15 DRUG & POISON INFORMATION CENTER (DPIC)

The aim of the Drug and Poison Information Center (DPIC) internship is to provide the intern with experience in providing drug information services to patients.

Learning objectives:

1. Understand the main functions of DPIC and the role of a pharmacist as drug information provider
2. Identify, describe and use the approach of responding to a drug information request.
3. Effectively use the references available in the Drug Information Center like Micromedex, Epocrates etc.
4. Demonstrate the ability to properly respond to drug information request by
 - a. Obtaining accurate and complete background information
 - b. Outlining a search strategy, including classifying the request
 - c. Researching the request using appropriate references and collecting the necessary data
 - d. Evaluating information
 - e. Formulating and communicating the response
5. Identify the strengths and weaknesses of available resources (primary, secondary and tertiary references) and select the appropriate resources/databases.
6. Recognize various types of requests and the required background information that should be extracted for each type.
7. Prepare drug monographs
8. Familiarize with common types of drug poisoning and information about antidotes.
9. Familiarize the process of tracking and reporting adverse drug reactions/medication errors.

Recommended references:

1. Drug Information: A Guide for Pharmacists, 5e. Patrick Malone. 2014.
2. Drug facts and Comparisons: Facts and Comparisons. 2017
3. AHFS Drug Information 2016
4. Casarett & Doull's Essentials of Toxicology, 3rd Ed, 2015

2.5.16 THERAPEUTIC DRUG MONITORING (TDM)

The aim of the TDM internship is to provide the intern with experience in providing TDM services.

Learning objectives:

1. Estimate the values of different pharmacokinetic parameters from plasma drug concentration and urinary excretion data.
2. Understand pharmacokinetic differences between modified release and immediate release dosage forms.
3. Devise an initial dosage regimen and monitoring strategy using pharmacokinetic principles and methods of drugs that are monitored by the TDM service and dosage adjustment based on plasma concentration.
4. Define the monitoring parameters for the safe and efficacious use of each drug used in patient including drug concentrations and therapeutic endpoints.
5. List appropriate target concentrations of drugs monitored by TDM service.
6. Familiarize with computer programs used in Therapeutic drug monitoring.
7. Recommend appropriate blood sampling times and analytical methodologies for individualizing patient drug therapy.
8. Identify and solve Drug Related Problems associated with therapeutic drug concentrations of mainly drugs with low therapeutic index like Digoxin, Lithium, Phenytoin, Phenobarbitone, Theophylline, Lidocaine, Carbamazepine, Cyclosporin, Methotrexate, Aminoglycosides and other antiepileptics.
9. Understand the effect of pharmacokinetics and pharmacodynamic parameters and the observed drug concentration and clinical response.
10. Recommend dose adjustment of drugs based on renal and hepatic functions.

Recommended references:

1. Applied Clinical Pharmacokinetics, 3rd ed, Larry Baur, Mc Graw Hill Medical Publications, 2014
2. Applied Biopharmaceutics & Pharmacokinetics, 7th Edition, Leon Shergel, Mc Graw Hill Medical Publications. 2016
3. Applied Pharmacokinetics and Pharmacodynamics: Principles of Therapeutic Drug Monitoring. Michael E. Burton, 4th Edition. Lippincott Williams & Wilkins 2005.

2.5.17 TOTAL PARENTERAL NUTRITION (TPN)

The aim of the TPM internship is to provide the intern with experience in providing TPN services to patients.

Learning objectives:

1. Estimate daily micro/macro nutrient requirements.
2. Evaluate the indications for and suitability of the patient for specialized nutrition support (SNS).
3. Review policies and procedures for preparation and administration of admixtures, chemotherapy, and TPN.
4. Should be able to understand and explain the principles of aseptic technique.
5. Observe the preparation of all types of IV admixtures and parenteral nutrition.
6. Discuss and compare specific parenteral therapy concerns and needs of different types of patients (e.g. neonatal, pediatric, elderly, and critically ill).
7. Should be able demonstrate the skill and proficiency to identify, interpret and suggest appropriate laboratory tests for total parenteral nutrition monitoring.
8. Evaluate educational needs of the patient, health-care providers, and caregivers regarding specialized nutrition support (SNS).
9. Should be able to identify nutrition and drug related problem associated with TPN.
10. Identify interactions between drugs, dietary supplements, and nutrients.
11. Complete all records and workload reports required by the IV admixture service.
12. Using a pharmaceutical care approach, review orders for all types of parenteral drug therapy, and clarify them as necessary to ensure optimal patient care.

Recommended references:

1. Nutrition and Diet Therapy: Principles and Practice. Linda Kelly Debruyne. Wadsworth Publishing Co. 8th Edition, 2012
2. ESPEN Guidelines on Parenteral Nutrition: Intensive care. Clinical Nutrition 28 (2009) 387–400
3. Dietitian's Handbook of Enteral and Parental Nutrition. Annalynn Skipper. 3rd Edition, 2011.

2.5.18 INVENTORY CONTROL

The aim of the Inventory Control internship is to provide the intern with experience in managing inventory at their practice site.

Learning objectives:

1. To understand the process of drug procurement.
2. To understand the drug receipt and storage criteria.
3. Identify the drug tracking and inventory management.
4. Discuss the wasted and expired drug management.
5. Describe inventory principles and techniques.
6. Discuss and compare various inventory control techniques in effective management of inventory.
7. Complete all records and workload reports required by the inventory control department.
8. Effectively communicate with healthcare professionals.

Recommended references:

1. SR Pharmacy Series Drug Store Business Management and Accountancy 1 ED. M Mumthaz Alam, Md. Aslam, Mohammed Kashif Iqbal. Elsevier Publishing. 1st Edition, 2020
2. Pharmacy Practice. Kevin Taylor and Geoffrey Harding (Editors). Published by Taylor and Francis. 2005

2.6.0 APPE-8 RESEARCH PRACTICE EXPERIENCE - PHCL 658

The aim of this internship will provide the intern with the opportunity to develop skills in research and get hands on experience in application of various research methodologies that they have learned. The purpose of this internship is to integrate the research with clinical practice and built scientific temper and research aptitude in the students.

The research project is a continuous program that runs throughout the internship program and end with the research rotation at the end of internship. The research project with be an ongoing process from the start of internship and during this period, the students will submit the proposal, and conduct the study. At the end of internship, during the Research rotation the analysis of the study will be done. The results of the study will be presented by the students for evaluation.

SECTION-3: APPENDICES

3.1 Appendix A. Internship Undertaking Format

UNDERTAKING

I. (Name and address).....
.....
.....

I.D.No.an Intern of the College of Pharmacy, Jazan University undertake that, I abide by all the Rules and Instructions and duties and responsibilities mentioned in this internship manual as written and framed by the College of Pharmacy, Jazan University and as amended from time to time. If I fail to do so under any circumstances I shall be responsible for any actions from the authorities.

SIGNATURE

NAME:

DATE:

CONTACT DETAILS

MOBILE NO:

E mail ID

3.2 Appendix B – Inpatient SOAP Format

KINGDOM OF SAUDI ARABIA	JAZAN UNIVERSITY
Ministry of Higher Education	College of Pharmacy
College of Pharmacy, Jazan University	Page 43
DEPARTMENT OF CLINICAL PHARMACY	

PATIENT PROFILE AND MEDICATION REVIEW FOR PHARM.D STUDENTS	
Patient's Name (initials only):	Medical Record No :

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

OBJECTIVE DATA:

Physical Examination:

TEMP	BP	PR	RR	SPO ₂
	mm Hg			

CNS:

CVS:

Respiratory:

GIT:

Other systems:

LIVER FUNCTION TEST:

INVESTIGATIONS	VALUE	REMARKS	NORMAL RANGE
ALT			
AST			
ALP			
SERUM BILIRUBIN			
TOTAL PROTEIN			
ALBUMIN			

COMPLETE BLOOD COUNT:

INVESTIGATIONS	VALUE	NORMAL RANGE	REMARKS
RBCS			
WBCS			
PLATELETS			
HB			
HCT			
MCV			
MCH			
MCHC			
RETICULOCYTE			
ESR			
NEUTROPHIL			
BASOPHILS			
EOSINOPHILS			
LYMPHOCYTES			

RENAL FUNCTION TEST:

UREA			
CREATININE			
SODIUM			
POTASSIUM			
CALCIUM			
PHOSPHORUS			
MAGNESIUM			

CARDIAC PROFILE:

LDH			
AST			
ALT			

IRON STUDY:

SERUM IRON			
SERUM FERRITIN			
TIBC			

CKME

TROP

OTHE

X-RAY

CT SC

DIAGNOSIS:

Treating physician plan:

CLINICAL PHARMACIST FOLLOW UP

<u>Subjective:</u>	<u>Objective:</u>
<u>Assessment:</u>	<u>Plan "including counseling":</u>
<u>Discharge notes:</u>	<u>Counseling notes:</u>

3.3 Appendix C–Ambulatory Care SOAP Format

KINGDOM OF SAUDI ARABIA Ministry of Higher Education College of Pharmacy, Jazan University		JAZAN UNIVERSITY College of Pharmacy
DEPARTMENT OF CLINICAL PHARMACY		

PATIENT PROFILE AND MEDICATION REVIEW FOR PHARM.D STUDENTS		

Subjective Data:
Chief Complaints:

History of present illness:

Past Medical History: HTN DM ASTHMA
 Other Illnesses

FH_x:

SH_x:

REVIEW OF SYSTEMS:

DRUG HISTORY:

CURRENT HOME MEDICATIONS (Prior to current visit):

Medication	Dose, frequency	Indication

OBJECTIVE DATA:

Physical Examination:

TEMP	BP	PR	RR	SPO ₂
	mm Hg			

CNS:

CVS:

Respiratory:

Other systems:

LIVER FUNCTION TEST:

INVESTIGATIONS	VALUE	REMARKS	NORMAL RANGE
ALT			
AST			
ALP			
SERUM BILIRUBIN			
TOTAL PROTEIN			
ALBUMIN			

RENAL FUNCTION TEST:

UREA			
CREATININE			
SODIUM			
POTASSIUM			
CALCIUM			
PHOSPHORUS			
MAGNESIUM			

COMPLETE BLOOD COUNT:

INVESTIGATIONS	VALUE	NORMAL RANGE	REMARKS
RBCS			
WBCS			
PLATELETS			
HB			
HCT			
MCV			

MCH			
MCHC			
RETICULOCYTE			
ESR			
NEUTROPHIL			
BASOPHILS			
EOSINOPHILS			
LYMPHOCYTES			

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

CARDIAC PANEL:

<u>CKMB</u>			
<u>ALT</u>			
<u>AST</u>			
<u>TROPONIN</u>			

IRON STUDY:

Serum iron			
Serum ferritin			
Ferritin saturation			
Total iron binding capacity			

OTHER INVESTIGATIONS:

X-RAY

U/S

CT scan

MRI:

OTHERS:

FINAL DIAGNOSIS:

Plan:

Treating physician plan:

Clinical Pharmacist plan:

CLINICAL PHARMACIST FOLLOW UP

DATE:

TIME:

Subjective:

Objective:

Assessment:

Plan "including counseling":

3.4 Appendix D: Pharmaceutical Care Patient Record for Care Plan

Pharmaceutical Care Patient Record						
Patient Name:			Gender:			
Age:			Race:			
Address:			Actual Weight:			
Telephone:			Ideal Weight:			
Medical Conditions:			Allergies:			
Tobacco/Substance Use:			Adverse Reactions:			
Medication Record						
Start Date	Stop Date	Indication	Drug Name	Actual Strength	Regimen	Clinical Impressions
Assessment, Plan, and Follow-Up Evaluation						
Date	Medical Conditions	Drug-Therapy Problem	Goal	Current Status	Interventions	Follow-Up Plan

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.5 Appendix E: Internship Evaluation Form: APPE-1 Community Pharmacy

Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ /20 to / /20



General Guidelines for Preceptor

1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period
2. Please make sure that the attendance form is signed by both the preceptor and the intern.
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4. *If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.*
5. *Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.*
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
10 Marks	Professionalism	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	<i>Pharmaceutical Care Dept.</i>	..... /05	
		<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /10	
Total Marks			..... /40	

B. Pharmaceutical Care, Clinical and Communication Skills Evaluation (Total Marks – 60)

Skills	Marks Obtained	Comments
Effectively understand the principles of drug dispensing	..... /10	
Effectively understand the principles of drug stock monitoring	..... /10	
Effectively counsel the patients about the therapeutic indications, therapeutic goals, current status, interventions, and follow up by using the pharmaceutical care patient record	..... /10	
Effectively discuss with the healthcare professionals about the therapeutic indications, therapeutic goals, current status, interventions, and follow up the patients	..... /10	
Effectively communicates with healthcare professionals	..... /10	
Effectively communicates with patients	..... /10	
Total Marks		..... /60
Total Marks (out of 100)		

Preceptor Name & Signature:

Stamp:

3.6 Appendix F: Internship Evaluation Form: APPE-2 Advanced Hospital Pharmacy			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20

General Guidelines for Preceptor	
1.	Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period.
2.	Please make sure that the attendance form is signed by both the preceptor and the intern.
3.	Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4.	If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.
5.	Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.
6.	Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

+

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)				
Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
10 Marks	Professionalism	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	Pharmaceutical Care Dept.	..... /05	
		Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /10	
Total Marks			..... /40	

B. Pharmaceutical and communication skills evaluation (Total Marks - 60)		
Skills	Marks	Comments
In-patient Pharmacy (2 weeks): - Understanding of the general policy and procedure of in-patient pharmacy. - Understanding unit dose system and floor stock system - Understand the inpatient medication orders and processes	..... /15	
Out-patient Pharmacy (3 weeks): - Able to understand policy and procedure of out-patient pharmacy - Able to receive, prepare, double-check and dispense out-patient prescriptions - Able to perform patient counseling	..... /20	
Sterile compounding unit (1 week): - Understand the various equipment used: laminar air flow, HEPA filter - Prepare solutions under aseptic technique. - Calculate and prepare TPN solutions - Able to discuss different references used for drug compatibility, stability and interactions	..... /05	(In case of non-availability, please distribute the marks on in-patient and out-patient pharmacy)
Narcotics and controlled psychotropic drugs (1 week): - Understanding policy & procedure of narcotics & controlled psychotropic drugs - Being familiar with the classifications of controlled drugs	..... /05	
Extemporaneous preparations (1 week): - Ability to make the proper pharmaceutical calculations - Ability to prepare some extemporaneous preparations. - Understand the common clinical indications of extemporaneous preparations	..... /05	(In case of non-availability, please distribute the marks on in-patient and out-patient pharmacy)
Prepare one of the following: - An article for the pharmacy newsletter if available. - An assignment related to hospital pharmacy practice. - Deliver a presentation related to hospital pharmacy practice	Optional	
Communicates effectively with healthcare professionals	..... /05	
Communicates effectively with patients	..... /05	
Total Marks	..... /60	Total Marks ...../100

Preceptor Name:

Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.7 Appendix G: Internship Evaluation Form: APPE-3 Ambulatory Care			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / /20

General Guidelines for Preceptor
1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period
2. Please make sure that the attendance form is signed by both the preceptor and the intern.
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4. <i>If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.</i>
5. <i>Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.</i>
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

S. No	Parameter	Marks to given by	Marks Obtained	Comments
1.(10 Marks)	Attendance & Punctuality	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
2.(10 Marks)	Professionalism	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
3.(20 Marks)	Attitude towards Patients & Healthcare Professionals	Pharmaceutical Care Dept.	..... /05	
		Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /10	
Total Marks			..... /40	



B. Clinical and communication skills (Total Marks – 60)

Parameter	Marks	Comments
Effectively understands the clinical history	..... /10	
Effectively understands the findings of clinical examination	..... /10	
Effectively understands the investigation results	..... /10	
Effectively understands the diagnosis	..... /10	
Effectively design an appropriate ambulatory pharmaceutical care plan	..... /10	
Effectively communicates with healthcare professionals	..... /05	
Effectively communicates with patients	..... /05	
Total Marks		..... /60
Total Marks (out of 100)		

Preceptor Name & Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.8 Appendix H: Internship Evaluation Form: APPE-4 Inpatient General Medicine

Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20

General Guidelines for Preceptor

1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period
2. Please make sure that the attendance form is signed by both the preceptor and the intern.
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4. *If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.*
5. *Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.*
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

S. No	Parameter	Marks to given by	Marks Obtained	Comments
1.(10 Marks)	Attendance & Punctuality	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
2.(10 Marks)	Professionalism	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
3.(20 Marks)	Attitude towards Patients & Healthcare Professionals	<i>Pharmaceutical Care Dept.</i>	..... /05	
		<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /10	
Total Marks			..... /40	

B. Clinical and communication skills (Total Marks – 60)

Skills	Marks Obtained	Comments
Apply the pharmaceutical care process in management of every disease condition.	..... /10	
Obtain a complete medication history from patients admitted to the medical wards.	..... /10	
Develop appropriate assessment and plan from the information obtained in the medication history.	..... /10	
Assess the significance of pharmacokinetic parameters of the patient for determining the appropriateness of the drug therapy.	..... /10	
Application of relevant pharmaceutical principles when evaluating therapeutic problems & communicate recommendations to the health care team	..... /10	
Provide appropriate monitoring parameters for the chosen treatment plan		
Effectively communicates with healthcare professionals	..... /05	
Effectively communicates with patients	..... /05	
Total Marks	..... /60	Total Marks ...../100

Preceptor Name & Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.9 Appendix I: Internship Evaluation Form: APPE-6 Elective			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20

- | General Guidelines for Preceptor |
|--|
| 1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period |
| 2. Please make sure that the attendance form is signed by both the preceptor and the intern. |
| 3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period. |
| 4. <i>If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.</i> |
| 5. <i>Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.</i> |
| 6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location. |

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

S. No	Parameter	Marks to given by	Marks Obtained	Comments
1.(10 Marks)	Attendance & Punctuality	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
2.(10 Marks)	Professionalism	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
3.(20 Marks)	Attitude towards Patients & Healthcare Professionals	Pharmaceutical Care Dept.	..... /05	
		Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /10	
Total Marks			..... /40	

B. Clinical and communication skills (Total Marks – 60)

Parameter	Marks	Comments
Effectively understands the clinical history	..... /10	
Effectively understands the findings of clinical examination	..... /10	
Effectively understands the investigation results	..... /10	
Effectively understands the diagnosis	..... /10	
Effectively design an appropriate ambulatory pharmaceutical care plan	..... /10	
Effectively communicates with healthcare professionals	..... /05	
Effectively communicates with patients	..... /05	
Total Marks		..... /60
Total Marks (out of 100)		

Preceptor Name & Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.10 Appendix J: Internship Evaluation Form: Drug and Poison Information Centre (Elective)			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20
General Guidelines for Preceptor			
1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period.			
2. Please make sure that the attendance form is signed by both the preceptor and the intern.			
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.			
4. <i>If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.</i>			
5. <i>Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.</i>			
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.			

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
10 Marks	Professionalism	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	<i>Pharmaceutical Care Dept.</i>	..... /05	
		<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /10	
Total Marks			..... /40	

B. Other Skills Evaluation (Total Marks – 60)

Parameter	Marks Obtained	Comments
Understanding of DPIC literatures and searching processes and appropriate use of drug information resources	..... /2.5	
Providing drug information responses at the proper time and in a suitable format, i.e. responses should have: an introduction, findings from the literature and intern recommendations or conclusions	..... /2.5	
Performance during stay in DPIC receiving and preparing the answers to the daily inquiries and delivering the answer to the health care provider or to a lay person.	..... /2.5	
Maintaining a well-organized portfolio and assuring patient privacy and confidentiality in all drug information activities.	..... /2.5	
Four drug information responses/day and verbal queries	..... /05	
Six Adverse drug events reports (Med Watch & Yellow card) each	..... /05	
Preparing at least five of the following: - One formulary drug monograph - One journal club (Preparation and presentation) - One evidence-based practice guideline review - One patient education material as a poster - One patient information material as a leaflet	..... /30	
(Following Assignments are applicable only in a hospital setting) -Two medication error reports -Attending and reporting one pharmacy related meeting e.g. pharmacy and therapeutic committee P&T, Infection control, Quality assurance etc. -One pharmaco-economic analysis report	..... /10	
Discussion on the daily questions and the assignments	..... /10	
Total Marks	..... /60	Total Marks...../100

Preceptor Name & Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.11 Appendix K: Internship Evaluation Form: Pharmacy Inventory Control (Elective)			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20
General Guidelines for Preceptor			
1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period			
2. <u>Regularity, punctuality & time-keeping are extremely important and of utmost priority. Any student failing to comply will have his/her marks deducted accordingly.</u>			
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.			
4. <i>If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.</i>			
5. <i>Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms are enclosed in a tightly sealed and stamped envelope.</i>			
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.			

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
10 Marks	Professionalism	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	<i>Pharmaceutical Care Dept.</i>	..... /05	
		<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /10	
Total Marks			..... /40	

B. Technical and Professional Skills (Total Marks – 60)

Skills	Marks Obtained	Comments
Effectively understand the process of drug procurement	..... /10	
Effectively understand the drug receipt and storage criteria	..... /10	
Effectively understand the drug tracking and inventory management	..... /10	
Effectively understand the wasted and expired drug management	..... /10	
Overall understanding of inventory principle, purchase technique and drug supply system	..... /10	
Effectively communicates with healthcare professionals	..... /05	
Effectively communicates with patients	..... /05	
Total Marks	..... /60	Total Marks /100

Preceptor's Name: _____

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.12 Appendix L: Internship Evaluation Form: Therapeutic Drug Monitoring (Elective)			
Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20

General Guidelines for Preceptor
1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period.
2. Please make sure that the attendance form is signed by both the preceptor and the intern.
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4. <i>If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.</i>
5. <i>Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.</i>
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
10 Marks	Professionalism	Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	Pharmaceutical Care Dept.	..... /05	
		Pharmacy Training Preceptor	..... /05	
		Main Preceptor	..... /10	
Total Marks			..... /40	

B. Pharmaceutical and Communication Skills Evaluation (Total Marks – 60)

Skills	Marks	Comments
Understand basic principles of TDM.	..... /2.5	
Familiarize with computer programs and analytical methods used in TDM.	..... /2.5	
Recommend appropriate blood sampling times and analytical methodologies for individualizing patient drug therapy.	..... /05	
Provide patient-specific initial dosage recommendations for therapeutically monitored drugs and dosage adjustment based on plasma concentration.	..... /10	
Identify and solve drug related problems associated with therapeutic drug concentrations of mainly drugs with low therapeutic index like Digoxin, Lithium, Phenytoin, Phenobarbitone, Theophylline, Lidocaine, Carbamazepine, Cyclosporin, Methotrexate, Aminoglycosides, Vancomycin and other antiepileptics.	..... /10	
List appropriate target concentrations of drugs monitored by TDM service.	..... /10	
Recommend dose adjustment of drugs based on renal and hepatic function	..... /10	
Prepare one or more of the following: - An article for the pharmacy newsletter if available. - Evaluate drug studies reported in the pharmacokinetic literature. - An assignment related to TDM - Deliver a presentation related to TDM	Optional	
Communicates effectively with healthcare professionals	..... /05	
Communicates effectively with patients	..... /05	
Total Marks	..... /60	Total Marks...../100

Preceptor Name & Signature:

Stamp:

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

3.13 Appendix M: Internship Evaluation Form: Total Parenteral Nutrition (Elective)

Student Name		Registration No	
Rotation Name		Rotation Code	
Location		Training period	/ / 20 to / / 20

General Guidelines for Preceptor

1. Continuous feedbacks to the intern are recommended in order to fill the gaps and to strengthen the weaknesses (if any) that might have been observed during the training period.
2. Please make sure that the attendance form is signed by both the preceptor and the intern.
3. Please make sure that the SOAP formats are appropriately completed by the intern during the training period.
4. *If the intern fails part (A) evaluation, this will be considered as an overall clear failure irrespective to the degree that has been given in the other skills; consequently, the intern should repeat the full duration of the concerned rotation.*
5. *Please make sure that the evaluation form together with the attendance form and all the completed SOAP forms and enclose them in a tightly sealed and stamped envelope.*
6. Evaluation form should be sent to the College of Pharmacy by the college training supervisor in each training location.

A. Evaluation of Regularity, Professionalism & Attitude (Total Marks - 40)

Marks	Parameter	Marks to given by	Marks Obtained	Comments
10 Marks	Attendance & Punctuality	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
10 Marks	Professionalism	<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /05	
20 Marks	Attitude towards Patients & Healthcare Professionals	<i>Pharmaceutical Care Dept.</i>	..... /05	
		<i>Pharmacy Training Preceptor</i>	..... /05	
		<i>Main Preceptor</i>	..... /10	
Total Marks			..... /40	

B. Pharmaceutical and Communication Skills Evaluation (Total Marks – 60)

Skills	Marks	Comments
Understanding the basic concepts of TPN calculations, preparation, and storage.	..... /05	
Receiving orders and calculation of nutrient concentration - Able to understand the TPN orders and calculate the nutrient concentrations	..... /10	
Applying the IV/TPN room regulations: - Able to understand the sterile policy and procedure of IV/TPN room - Able to apply the sterile procedures correctly	..... /05	}
Understand the operation and function of equipment in the IV/TPN room - Understand the concept of airflow and filter systems used in IV/TPN room - Applying Laminar Flow Hood regulations	..... /05	
Preparing TPN preparations solutions (manually or with automated systems)	..... /15	
Labeling preparations appropriately	..... /05	
Sending orders to floor, nurse stations, or patient room	..... /05	
Prepare one of the following: - An article for the pharmacy newsletter if available. - An assignment related to IV/TPN preparations - Deliver a presentation related to TPN preparation	<i>Optional</i>	
Communicates effectively with healthcare professionals	..... /05	
Communicates effectively with patients	..... /05	
Total Marks	..... /60	Total Marks...../100

Preceptor Name & Signature:

Stamp:

3.14 Appendix O- Attendance Form

ATTENDANCE FORM							
Student Name				Registration No			
Rotation Name				Rotation Code			
Location				Training period	/ / 20 to / / 20		

Week	Day	Date	Time In	Signature	Time Out	Signature	Preceptor's Signature
WEEK - 1	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						
WEEK - 2	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						
WEEK - 3	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						
WEEK - 4	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						
WEEK - 5	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						
WEEK - 6	SUNDAY						
	MONDAY						
	TUESDAY						
	WEDNESDAY						
	THURSDAY						

Preceptor's Name:
Signature:

Stamp:

3.15 Appendix P- Student Internship feedback format



INTERN FEED-BACK FORM ABOUT THE FIELD EXPERIENCE

Please fill the details below	
1. Name:	
2. University I.D:	
3. Field Experience/Rotation:	
4. Rotation period: From _____ to _____	
5. Location of the training site:	

Intern's satisfaction with the quality of the training and the training sites.

S.No	Please indicate the degree to which you agree or disagree	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1.	My responsibilities were clearly defined at the training site.					
2.	The objectives of the rotation were made clear to me by the preceptor.					
3.	I am aware of the internship manual for internship training.					
4.	The internship manual is available and serves as a guide at the training site.					
5.	There are adequate facilities and resources at the training site.					
6.	I had access to the library/e-learning.					
7.	I was assigned with a team of specialists for daily rounds for clinical rotations.					
8.	I had easy accessibility to the patient medication record.					
9.	I was encouraged to participate in discussion regarding patient assessment and making of patient care plan.					
10.	I had easy accessibility to the patient counselling.					
11.	My preceptor/consultant helped and guided me in times of need.					
12.	I am satisfied with my evaluation criteria.					
13.	Interns at my site are encouraged to assume responsibility for their own learning.					
14.	Overall, I am satisfied with the facilities at my site to precept the interns.					

SECTION-4: ANNEXURES

4.1 LIST OF ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

APPE NO	TRAINING TITLE	PHCL
APPE-1	Advanced Community Pharmacy	651
APPE-2	Advanced Hospital Pharmacy	652
APPE-3	Ambulatory Care	653
APPE-3	Ambulatory Care-Diabetes	653
APPE-3	Ambulatory Care-Respiratory	653
APPE-3	Ambulatory Care-Rheumatology	653
APPE-3	Ambulatory Care-Coagulation	653
APPE-3	Ambulatory Care-Epilepsy	653
APPE-3	Ambulatory Care-Neurosciences	653
APPE-4	Internal Medicine (General Medicine I)	654
APPE-5	Internal Medicine (General Medicine II)	655
	Electives (APPE-6 & 7)#	656&657
APPE-6 & 7	Internal Medicine- Endocrinology	656&657
APPE-6 & 7	Internal Medicine-Respiratory	656&657
APPE-6 & 7	Internal Medicine-Gastroenterology	656&657
APPE-6 & 7	Internal Medicine-Nephrology	656&657
APPE-6 & 7	Internal Medicine-Cardiology	656&657
APPE-6 & 7	Internal Medicine-Neurology	656&657
APPE-6 & 7	Emergency Medicine	656&657
APPE-6 & 7	Intensive Care Unit -ICU	656&657
APPE-6 & 7	Oncology	656&657
APPE-6 & 7	Hematology	656&657
APPE-6 & 7	Infectious diseases	656&657
APPE-6 & 7	Surgery	656&657
APPE-6 & 7	Psychiatry	656&657
APPE-6 & 7	Obstetrics & Gynecology	656&657
APPE-6 & 7	Therapeutic Drug Monitoring -TDM	656&657
APPE-6 & 7	Total Parenteral Nutrition TPN	656&657
APPE-6 & 7	Inventory Control	656&657
APPE-6 & 7	Infection Control	656&657
APPE-6 & 7	Patient Safety	656&657
APPE-6 & 7	Academic Rotation	656&657
APPE-8	Research Practice Experience	658

An intern may also opt for any of the Ambulatory care services or Pharmaceutical care skills as an 'elective rotation' in addition to that was taken as part of compulsory rotation.

4.2 INTERNSHIP TITLE AND LOCATION LIST

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

C: Compulsory rotation,
E: Elective rotation

S. No.	TRAINING TITLE	LOCATIONS	Note
1	Advanced Hospital Pharmacy	List of hospitals attached (Annexure 1)	C
2	Advanced Community Pharmacy	List of community pharmacies attached (Annexure 2)	C
Internal Medicine 1 & 2			
6	Inpatient General Medicine -1&2	KFCH, Samtah G.H., Baish G.H., Abu Arish G.H., Gizan G.H., Alardhah G.H, PMNH, Alahad, Damad, Al Darb, Farasan G.H	C
7	Internal Medicine -1 Endocrinology	KFCH	E
8	Internal Medicine -2 Gastroenterology	KFCH, Gizan G.H, PMNH	E
9	Internal Medicine -3 Cardiology	PMNH	E
10	Internal Medicine -4 Neurology	KFCH	E
11	Internal Medicine -5 Respiratory	KFCH, Abu Arish G.H, Gizan G.H., PMNH	E
12	Internal Medicine -6 Nephrology	KFCH	E
13	Internal Medicine -7 Emergency Medicine	KFCH, Abu Arish G.H, Gizan G.H., PMNH	E
14	Internal Medicine -8 ICU	KFCH, Gizan G.H., Sabya G.H, Abu Arish G.H, Baish G.H., Samta G.H, PMNH	E
15	Internal Medicine -9 Infectious Disease	KFCH, Gizan G.H., Abu Arish G.H, PMNH, Samta G.H, Sabya G.H	E
16	Internal Medicine -10 Hematology	PMNH	E
17	Internal Medicine -11 Oncology	PMNH	E
18	Internal Medicine -12 Psychiatry	Psychiatric Hospital	E
19	Internal Medicine -13 Obstetrics & Gynecology	Samta G.H	E
20	Internal Medicine -14 Pediatrics	KFCH, Baish, Abu Arish G.H, Samtah G.H, Alahad G.H, Farasan G.H, Damad G.H,	E
21	Internal Medicine -15 Drug and Poison Information Center	College of Pharmacy	E
22	Internal Medicine -16 TDM	Toxicology Center Jizan	E
23	Internal Medicine -17 TPN	KFCH	E
23	Internal Medicine -18 Inventory Control	KFCH	E
24	Internal Medicine -19 Surgery	Samta G.H, Alahad G.H	
Ambulatory Care Max. 2 choices 1st as compulsory the 2nd as elective			
13	Ambulatory Care-1 Diabetes	KFCH (Female), Diabetic center (Gizan G.H.)	C
14	Ambulatory Care-2 Respiratory	Abu Arish Chest Disease H.	C
15	Ambulatory Care-3 Rheumatology	KFCH	C
16	Ambulatory Care-4 Coagulation	KFCH	C
17	Ambulatory Care-5 Neurosciences	KFCH	C

4.2.1 Annexure-1 أسماء مواقع التدريب بمستشفيات منطقة جازان List of Hospitals in Jazan area

Location name	اسم الموقع	رمز الموقع Location code
College of Pharmacy (Jazan University)	كلية الصيدلة جامعة جازان	1
King Fahad Central Hospital	مستشفى الملك فهد المركزي	2
Prince Mohammad Bin Naser Hospital	مستشفى الامير محمد بن ناصر	3
Jazan General Hospital	مستشفى جازان العام	4
Abu-Arish General Hospital	مستشفى أبو عريش العام	5
Sabya General Hospital	مستشفى صبيا العام	6
Samta General Hospital	مستشفى صامطة العام	7
AL-Ardha General Hospital	مستشفى العارضة العام	8
Farasan General Hospital	مستشفى فرسان العام	9
Faifa General Hospital	مستشفى فيفا العام	10
Baish General Hospital	مستشفى ببش العام	11
AL-Darb General Hospital	مستشفى الدرب العام	12
Al-Mowassam General Hospital	مستشفى الموسم العام	13
AL-Towal General Hospital	مستشفى الطوال العام	14
Dhamad General Hospital	مستشفى ضمد العام	15
Ahad AL-Masarha General Hospital	مستشفى احد المسارحة العام	16
Psychiatric Hospital	مستشفى الصحة النفسية	17
Chest Hospital	مستشفى الامراض الصدرية	18
Military Hospital, Jazan	مستشفى القوات المسلحة بجازان	19

4.3 INTERNSHIP OPTION FORM

Internship Manual: Advanced Pharmacy Practice Experience (APPE)

(To be filled by the candidates in their own handwriting)

Compulsory INTERNSHIP ROTATIONS				
PREFERENCE	CODE NO	INTERNSHIP TITLE	LOCATION	REMARKS
CR-1	PHCL-650	Hospital Pharmacy		يرجى اختيار ثلاث مستشفيات Please select 3 Hospitals
CR-2	PHCL-651	Community Pharmacy		
		Primary Health Care Pharmacy		
CR-3	PHCL-652	Pharmaceutical Care Skills		Two are allowed one as compulsory the other as optional
		•		
		•		
CR-4	PHCL-653	Ambulatory Care		Two are allowed one as compulsory the other as optional
		•		
		•		
		•		
		•		
CR-5	PHCL-654	General Medicine		يرجى اختيار ثلاث مستشفيات Please select 3 Hospitals
OPTIONAL INTERNSHIP ROTATION				
OR-1	PHCL-			<i>Any 10</i> from the list of internship rotations in the <i>order of your preference</i> . Note <i>Only 05</i> will be <i>finalized</i> by the internship committee.
OR-2	PHCL-			
OR-3	PHCL-			
OR-4	PHCL-			
OR-5	PHCL-			
OR-6	PHCL-			
OR-7	PHCL-			
OR-8	PHCL-			
OR-9	PHCL-			
OR-10	PHCL-			


Name of the Candidate:

Reg No:

Contact No (Mobile No) :

E-mail ID :

4.4 VACCINATION FORM



King Fahad Central Hospital - Jazan

Checklist Health Care Requirements for Trainees

Name : _____ Sex: Male Female

Training period: _____ Designation: _____ Age: _____

• Tuberculin Skin Test (TST)

<input type="checkbox"/> Negative	<input type="checkbox"/> Positive _____ MM (Induration)	Date: ____ / ____ /20__	Signature: _____
Test Radiograph (if TST is more than 10mm) (attach Report)			

• Serology Screening

	Date	Result	Remarks / Signature
HIV (attach documentation)		<input type="checkbox"/> Negative <input type="checkbox"/> Positive	
Hepatitis C (Anti-C) (attach documentation)		<input type="checkbox"/> Negative <input type="checkbox"/> Positive	
Hepatitis B (HBsAg) (attach Documentation)		<input type="checkbox"/> Negative <input type="checkbox"/> Positive	
Hepatitis B (HBsAb) (attach documentation)		<input type="checkbox"/> <10 IU/ml <input type="checkbox"/> ≥10 IU/ml _____ IU/ml	

• Vaccination

Influenza	Receive: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date: _____	
Hepatitis B	<input type="checkbox"/> Immune <input type="checkbox"/> Non-Immune (attach documentation)	If non-immune (<10): <input type="checkbox"/> 1st dose <input type="checkbox"/> 2nd dose <input type="checkbox"/> 3rd dose Date: _____ Date: _____ Date: _____	
Measles	<input type="checkbox"/> Immune <input type="checkbox"/> Non-Immune (attach documentation)	<input type="checkbox"/> Received vaccine Date: _____ Given by: _____	<input type="checkbox"/> Had disease during Childhood IgG Result: _____
Mumps	<input type="checkbox"/> Immune <input type="checkbox"/> Non-Immune (attach documentation)	<input type="checkbox"/> Received vaccine Date: _____ Given by: _____	<input type="checkbox"/> Had disease during Childhood IgG Result: _____
Rubella	<input type="checkbox"/> Immune <input type="checkbox"/> Non-Immune (attach documentation)	<input type="checkbox"/> Received vaccine Date: _____ Given by: _____	<input type="checkbox"/> Had disease during Childhood IgG Result: _____
Varicella	<input type="checkbox"/> Immune <input type="checkbox"/> Non-Immune (attach documentation)	<input type="checkbox"/> Received vaccine Date: _____ Given by: _____	<input type="checkbox"/> Had disease during Childhood IgG Result: _____

If the trainee not immune, vaccination has to be given prior to clinical training

All prospective medical trainees irrespective of duration of rotation at King Fahad Central Hospital, Jazan have to get this form completed by their original facility.

Sponsoring Institution: _____

Doctors Name: _____

Signature: _____

Date: _____

OFFICIAL
STAMP

For Employee Health Clinic use only in Training center

<input type="checkbox"/> Approved	<input type="checkbox"/> Not Approved	OFFICIAL STAMP
Name: _____		OFFICIAL STAMP
Signature: _____		

