



Training and Internship Administration

Training and Clinical Affairs

College of Pharmacy

Princess Nourah bint Abdulrahman University

**Advanced Clinical Pharmacy Practice Experience
Manual**

Year 2026 - 2027

Introduction

Overview:

This manual is your first resource to understand the training process. This document is provided to act as a guide and answer questions you may have regarding the training year. It is imperative that you refer to this manual and understand its contents throughout your training experience and you are ultimately responsible to adhere to all the regulation set out in this manual.

The clinical pharmacy practice experience is the last year in the Master of Advanced Clinical Pharmacy program, allows trainee to apply, compresence, and develop their clinical pharmacist responsibilities.

The ACPPE courses are structured with outcome expectations designed to reflect the attainment of practice related competencies as set forth by the international standards (i.e. Accreditation Council for Pharmacy Education “ACPE”). It consists of nine rotations (36 credit hours) that shall be on a continuous and uninterrupted basis. Each rotation is five weeks long (equals to 4 credit hours) to different hospitals.

Core & Elective Rotations

Five Core Rotations: from the program specification

Hospital Pharmacy 1

Internal Medicine 1

Intensive Care

Infectious Diseases

Cardiology

Four Elective Rotation of the followings:

Pediatrics

Emergency Medicine

Internal medicine 2

Drug Information

Total Parenteral Nutrition

Oncology

Hospital Pharmacy 2

Pharmacovigilance

Pharmacy Administration and Leadership

Quality Control

Pharmacoeconomics

Clinical Research

Training Year Objectives

- Employ the overall pharmacy mission to provide patient care, educate, and conduct research.
- Produce capable and adaptable practitioners through focused intensive clinical post-graduate training in a variety of patient-care environments.
- Develop expertise in optimal medication, use and safety, foster professional integrity, and promote effective teamwork to provide optimal pharmaceutical care.
- Create effective practice leaders and educators that are capable of proactively identifying, analyzing, and initiating process improvements.

Training Eligibility

To qualify for a training year, you must meet the following requirements:

- Successful completion of core courses from year 1.
- Attend training year orientation.
- Submit all required documentations as requested by Training and Internship Administration.

Advanced Clinical Pharmacy Practice Experience Calendar

Master year (2026-2027)		
Rotation number	Start	End
Rotation 1	21 Jun2026	23 Jul2026
Rotation 2	26 Jul2026	27 Aug2026
Rotation 3	30 Aug2026	1 Oct2026
23&24 september اليوم الوطني		
Rotation 4	4 Oct 2026	5 Nov 2026
Rotation 5	8Nov 2026	10Dec 2026
Rotation 6	13 Dec 2026	14 Jan 2027
Rotation 7	17Jan 2027	18 Feb 2027
Rotation 8	21Feb 2027	1Apr 2027
21&22 February يوم التأسيس 4to 13 March عيد الفطر		
Rotation 9	4 Apr2027	6may2027

Training Year Policies & Regulation

Documents submission to the Training and Internship Administration

- **Pre-training requirements:**
 - Intern personal data: link will be sent by the training and internship administration.
 - Copy of Saudi ID or Iqama.
 - Copy of Mother ID for non-Saudi interns from a Saudi mother.
 - Copy of Passport.
 - Curriculum vitae (CV).

- **During training requirements**
 - Any other requirement requested by the training and internship administration for training sites n (e.g., interview, CV, GPA).

- **End of training requirements**
 - Training year portfolio.



Training Rotation Guideline

- Trainees are allocated to the training sites based on the required rotation, elective rotation, their preferences, the preceptor's availability, and site's requirements.
- Once trainees have been assigned to the training site. they are not allowed to change the type/site of rotation under any circumstances without refer to the internship administration.
- Trainees not allowed to communicate the training coordinator in the training site to get acceptance. It's internship administration responsibility to communicate with training coordinator in the training site to request training seat.
- No change of the trainee's rotation schedule is allowed under any circumstances.
- All trainees need to fulfill the core rotations.

Attendance/absence policy and regulation

The master pharmacy trainee is expected to observe a policy of consistent and timely attendance from 8:00 a.m. to 4:00 p.m. The trainee should follow the procedure for requesting a leave as the following:

- A. The leave should not exceed 5 days in one rotation (20%) and should not be in the beginning of the rotation.
- B. The form needs to be sent to the internship administration for final approval.
- C. No more than 50% of students in one site.

- **Annual leave:**

A maximum of accumulated 10 days of absence (Including emergency leaves) are allowed during the entire training period and should be requested in accordance with the following:

1. The leave should not exceed 5 days in one rotation and should not be in the beginning of the rotation.
2. The trainee should first discuss her intention to request an annual leave with her assigned preceptor and get his approval.
3. The trainee should fill the absence form and get her preceptor's signature in the form one week in advance.
4. The absence form needs to be sent to the internship administration for final approval.

- **Educational leave:**

The trainee is granted three days educational leaves including participating in scientific conferences related to pharmacy. This has to be proceeded by an official request to the training administration four weeks in advance for approval.

- **Maternity leave:**

The trainee is entitled to 2 weeks maternity leave. The trainee should notify the internship administration about the expected day of delivery and update the administration if the delivery happened in different day. Any consequences resulted from the delay of notifying the internship administration about the delivery date, will be under the responsibility of the trainee. This leave, however, has to be compensated before the end of the training year.

- **Bereavement leave:**

The trainee is entitled to 3 days leave for the death of first-degree relatives and one day for the death of second-degree relatives.

- **Sick leave:**

The trainee must inform immediately her assigned preceptor and the internship administration. The sick leave report should be obtained from a governmental hospital as possible.

- **Absences:**

- In case of any absences, an excuse letter should be submitted to the internship administration in advance or at least 2 working days after the absence day. The maximum legitimate day of absences should not exceed 5 days from one rotation. All missing days should be compensated before the end of the training year.
- Unexcused absence may cause a failure in the rotation.

- **Ramadan, Eid and National day holidays:**

The trainee should follow the holidays which approved by Ministry of Human Resources and Social Development

- **Exams and training courses:**

No special leave for exams (e.g., Saudi Pharmacist Licensure Examination (SPLE)) and training courses.



General Responsibility

Training and internship administration:

1. Regulate the training and scheduling process.
2. Arrange training seats to provide good quality of training.
3. Communicate and coordinate with training sites and preceptors.
4. Collect the ACPPE rotation evaluation and document the grade.

trainee:

1. Submit all the required forms (e.g., document, portfolio).
2. Read the ACPPEs manual carefully (rotation objective and evaluation) before each rotation.
3. Adhere to training site policies.
4. Protect the patient and site confidentiality.
5. Follow the site/preceptor instructions.
6. Follow the vacations and leave policy.
7. Inform the training and internship administration in case of emergency situations.
8. Commit to the rotations offered by training and internship administration (any seat that is provided by the intern herself will not be considered).
9. Make sure that the preceptor has done the evaluation at the end of the rotation.
10. Exhibit a professional demeanor in manner, dress and adherence to professional standards at all times.
11. The trainee should be respected by faculty, admins, patients and preceptors as required by Islamic morals. In the case of any harassment, the intern has the right to refer it to the direct supervisor at the rotation site and the internship and training administration at the college, which treated with absolute confidentiality.
12. Follow the Princess Noura University dress code at all times, unless expressly directed to do otherwise by their preceptor.

Preceptor:

1. Follow the rotation objectives.
2. Guide the trainee throughout the rotation.

3. Maintain the intern confidentiality.
4. Provide an oral mid and final evaluation to the trainee.
5. Submit the evaluation.

Training Site:

1. Provide an trainee access or ID to be able to enter and practice at the site.
2. Orient the trainee to the training site.
3. Communicate with the preceptor / team to start the training.
4. Provide appropriate communication with PNU training and internship administration whenever needed.

Student feedback

Students will receive three types of surveys which are mandatory to be filled including the following:

1. Survey to assess the preceptor at the end of each rotation.
2. Survey to assess the training site at the end of each rotation.
3. Survey to assess the training year experience at the end of the training year.



Evaluation

ACPPE Evaluation

- Advanced Clinical Pharmacy Practice Experiences are evaluated on 100 point each rotation. The evaluation system focuses on the trainees' ability to demonstrate competent performance of the curricular outcomes and successful completion of the program. The cutoff point for the passing a rotation is a score of > 60%. Trainees' required activities are to be graded separately; completion of such activities is a REQUIREMENT to pass the rotation.
- The evaluation form link will be sent to the training coordinator in the training site at the beginning and the end of the rotation.
- Trainees are to be formally assessed twice during the rotation, at the midpoint (verbal evaluation) and end of the rotation (via the evaluation form link).
- The trainee shall have verbal feedback and discussion about their evaluation at the end of the rotation.
- It's the trainee's responsibility to ensure that the preceptor has evaluated her at the end of the rotation.
- The role of internship administration is to collect the submitted scores and don't interfere or amend any submitted scores.

The trainee’s performance evaluation is based upon the following rating scale:

5	4	3	2	1
Excellent	Good	Adequate	Fair	Poor
The trainee has demonstrated excellence in this competency. The trainee consistently performs the competency above expectations and requires minimal guidance and supervision from the preceptor.	The trainee has adequately demonstrated this competency. The trainee frequently performs the competency within expectations and requires minimal guidance and supervision from the preceptor.	The trainee is developing skills in this competency; however, some minor improvement(s) are needed in order to meet the competency. The trainee sometimes performs the competency within expectations and requires regular guidance and supervision.	The trainee is fairly meeting the competency and substantial effort is needed in order to meet the competency. The trainee rarely performs the competency within expectations and requires constant guidance and supervision.	The trainee is poorly meeting the competency and substantial effort is needed in order to meet the competency. The trainee does not perform the competency and requires constant guidance and supervision.

Training Year Portfolio

Introduction:

The trainee portfolio serves as a tool to organize selected pieces of work, and self-reflections on that work, that demonstrate intern achievement. The portfolio serves both an assessment function and a professional career development function for the individual intern. Each trainee prepares a portfolio as a longitudinal activity, collecting evidence of accomplishments and providing self-reflections as she progresses through the training year. The portfolio is expected to be submitted to internship administration by the end of the year.

What is a Portfolio?

A portfolio is a purposeful collection of work (evidence) that provides a record of, and reflection on, a trainee's activities and achievements. The portfolio has been designed as a composite of experiential learning activities. Trainees can document significant events, projects, patient cases, and other items that can be used as evidence. This also allow to build a database of their experiences that they can use as they continue on to their next educational experience, their residency, or their future employment.

Portfolio Requirements:

- The trainee needs to develop your portfolio so that it contains the following section:
 1. General Information (contact information, education background, awards, research experience).
 2. CV.
 3. For each rotation, please describe specific goals and expectations for the training. Do not offer broad, general goals. Your goals can focus on job-related goals as well as personal growth goals. Indicate how your training will help you accomplish your goals. What steps will you take to reach the goals you have set.
 4. Evidence of activities/assignments as required in the following ACPPE rotations. The “evidence” for each rotation are the documents/handouts that relate to the required

activities (Please note that this should be preceded by a summary sheet that explains the activity and describes your role and the results)

Mandatory ACPPEs

- For each Mandatory rotation, trainee must provide at least two of the following evidences:

➤ **Hospital rotation:**

1. Handout or other evidence that documents your presentation (the presentation may be a journal club, patient case, new drug review, etc).
2. Reflection about your experience in preparing and/or submitting an actual or simulated adverse event.
3. Two written drug information responses.
4. Handout or other evidence of an in service or educational session you provided to pharmacy, nursing or medical staff. Or if you have attended any educational session.

➤ **Clinical rotations:**

1. Handout or slides used for formal patient case presentation.
2. Journal club presentation - Handout or a brief written critique of the journal you discussed.
3. Two written drug information responses.
4. Handout or other evidence of an in-service or educational session you provided to pharmacy, nursing or medical staff.
5. Summary of consultation that you provided to patients, SOAP note that documents your data gathering, assessment, recommendations, counseling and follow up.

Elective ACPPEs

For each elective rotation, interns must provide at least two of the following evidences:

1. Presentation or project summary (handout, slides, or other evidence).
 2. Other evidences:
- For patient care electives, provide at least two of the following: SOAP (subjective, objective, assessment, and plan) notes, case presentation handout, journal club handout, or others.

- For non-patient care electives, provide at least two submissions that document what you learned/accomplished during the rotation. Examples include, patient safety documentation, drug review, teaching experience, agendas from meetings you have attended, materials that describe the training you have participated in, or other as approved by your preceptor.

Reflective Essay

- In this at least one-page essay, you should reflect on the meaning of the rotation experience for your intellectual development and career planning. Examples of reflections to include would be:
 - How this rotation experience impacts your professional growth and development?
 - Challenges and barriers?
 - Lesson learned?
 - In what ways did I meet my learning objectives? In what ways did I fall short?
 - What new insights did I gain into the practices and problems in this line of work?
 - What contributions did I make to this site?
 - What coursework or experiences do I need to continue my career preparation?
 - What were the best aspects of this experience?
 - What were the worst aspects of this experience?
 - What do I intend to do differently because of this experience?



Hospital Pharmacy Rotation

Rotation description:

The Advanced Pharmacy Practice Experience (APPE) hospital rotation provides practical experience for the advanced clinical pharmacy master trainees to understand the scope of inpatient pharmacy services. In this rotation, the trainee is expected to learn the processes and functions carried in the inpatient pharmacy. She will understand how to processes and check medication orders. Trainee will have opportunity to see the difference between centralized and decentralized pharmacy services. She will be able to learn how pharmaceutical preparations including extemporaneous pharmaceuticals are prepared, drug inventory control, drug orders, narcotics and controlled drugs policy, unit dose system and floor stock items are major functions to be understood by the trainee. Also, the trainee will learn the different pharmacy computer systems utilized in a hospital setting. In addition, she will learn how intravenous (IV) solutions are prescribed, calculated and prepared.

Goals and objectives

1. Understand and outline the role of the in patient pharmacy department in health care in Saudi Arabia.
2. Describe the following for all medication administered to assigned patients:
 - i. Indications for use and appropriateness of therapy
 - ii. Dosage and schedule
 - iii. Routes of administration and precautions
 - iv. Mechanism(s) of action
 - v. Alternative treatment available
 - vi. Onset and duration of action
 - vii. Drug-drug interactions, drug-lab interactions
 - viii. Pharmacokinetics and biopharmaceutics
 - ix. Influence of disease state on drug absorption
 - x. Therapeutic and toxic levels
 - xi. Adverse effects
 - xii. Appropriate patient information
 - xiii. Formulation and compatibilities [I.V. admixtures]
3. Demonstrate an understanding of workflow, policies and procedures related to in-patient pharmacy department.
4. Evaluate orders for completeness, allergies, appropriate dosing and route of administration, drug-drug interactions, formulary requirements.
5. Perform order entry including creating a profile or adding information to existing profile and selecting products appropriately.

6. Participate in the process of preparing, labeling, and dispensing for in-patient and discharged patients.
7. Apply the various drugs information sources available to support the evaluation and comparison of therapies and the optimization of drug therapy in individual patients.
8. Able to identify drug-related problems including drug interactions, common adverse reactions and monitoring parameters.
9. Demonstrate the ability to prioritize medication orders (i.e., STAT vs routine orders).
10. Identify strategies to reduce medication errors and participate in their implementation (e.g. high alert and look alike sound alike (LASA) medication).
11. Understand the general principles and procedures of medication error reporting.
12. Recognize medication storage regulations and how to access information related to appropriate medication storage.
13. Acquire skill in managing non-formulary, shortage and withdrawn medication.
14. Demonstrate an understanding of crash cart: medication list, layout, log sheet and pharmacist role.
15. Outline the hospital medication distribution system.
16. Practice prepackaging, compounding, calculation and extemporaneous preparation under supervision.
17. Demonstrate an understanding of the USP 797 regulations.
18. Prepare IV medication under supervision.
19. Utilize aseptic techniques related to IV compounding.
20. Calculate the quantity of active ingredients needed for each preparation.
21. Identify the process of checking, labeling and storage of IV components.
22. Utilize proper disposal techniques of hazardous material/waste.
23. Summaries the laws and regulations of narcotic and controlled drugs in Saudi Arabia.
24. Recognize storage of narcotic and controlled drug regulations.
25. Identify the process of prescribing narcotics and controlled drugs by nursing units and inpatient
26. Recognize the process of disposing of narcotic and controlled drugs.
27. Explain the process of dealing with expired and returned narcotics.
28. Practice dealing with incidents related to narcotics and controlled drugs.
29. Understand the different mechanism used for inventory control, how to order out of stock items and the methods used to maintain inpatient inventory.
30. Demonstrate cultural competency in caring for patients and in interacting with other healthcare providers.
31. Demonstrate professional attitudes and behaviors that characterize a professional pharmacist.

Trainee Responsibilities:

1. Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation.
2. Complete all assigned tasks by the preceptor.
3. Provide all the required activities (e.g., in-services for health professionals or students, presentation) to the pharmacy or patient care team.
4. Attend on time. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence.
5. Demonstrate a level of maturity required in a professional practice environment: appearance, attitude and behavior.
6. Supervise undergrad pharmacy intern.

Preceptor Responsibilities:

1. A preceptor must be willing to mentor trainee(s).
2. The preceptor should orient the student to the practice site, schedule, break, evaluation method and overall responsibilities on day one of the hospital pharmacy rotation.
3. Supervision and guidelines for trainees.
4. The preceptor should monitor student progress to ensure stated objectives are adequately met.
5. The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
6. The preceptor should provide ongoing formative feedback.
7. The preceptor should provide mid and final evaluation.
8. Final evaluation forms are due on the last day of the rotation after being discussed with the trainee.

Site Responsibilities:

1. Orient the student to the practice site including hospital system, policy and procedure, direction, parking, etc.
2. Provide a student ID to be able to enter and practice at the site.
3. Communicate with the hospital team/service to start the training.
4. Provide appropriate communication with PNU training and internship administration whenever needed.

Direct Patient Care “Clinical” Rotation

Description:

The Advanced Pharmacy Practice Experience (APPE) direct patient care rotation provides practical experience for the advance clinical pharmacy master trainees. They will get to practice the role of the clinical pharmacist in the hospital setting. They also obtain expertise in working with an interdisciplinary team as well as optimizing pharmacotherapeutic management. Further, the rotation enables trainees to gain knowledge of improving patient care and safety. Pharmacy trainee who participate in this rotation acquire knowledge, skills, and abilities beneficial to their professional careers.

Goals and objectives

1. Participate in clinical rounds
2. Understand the clinical picture of the patients including the disease states, treatments, and precautions.
3. Design appropriate pharmacotherapeutic plans.
4. Assess the pharmacotherapeutic plan and provide appropriate recommendations for treatment and monitoring.
5. Utilize appropriate digital technology in performing daily work including electronic medical record and appropriate drug information recourses.
6. Allow trainees to work autonomously to demonstrate independence in decision making
7. Demonstrate understanding of clinical research by discussing recent literatures.
8. Use appropriate resources, and critically appraise scientific literature to be utilized in evidence-based practice, drug information response and direct-patient care.
9. Develop collaborative professional relationships and demonstrate excellent communication skills when providing verbal information, presentations, and recommendations to the medical team.
10. Supervise undergrad pharmacy intern.
11. Demonstrate professional attitudes and behaviors that characterize a professional pharmacist.

Trainee Responsibilities:

- 1- Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation.
- 2- Complete all assigned tasks by the preceptor.
- 3- Provide all the required activities (e.g., in-service activities, presentations, adverse drug reaction reports/medication error reporting) to the pharmacy or patient care team.

- 4- Attend on time. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence.
- 5- Demonstrate a level of maturity required in a professional practice environment: appearance, attitude, and behavior.

Preceptor Responsibilities:

- 1- A preceptor must be willing to mentor trainee(s).
- 2- The preceptor should orient the trainees to the practice site, schedule, break, evaluation method and overall responsibilities on day one of the drug information rotation.
- 3- Supervision and guidelines of trainees when handling drug information questions, counseling and consultations.
- 4- The preceptor should monitor trainee progress to ensure stated objectives are adequately met.
- 5- The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
- 6- The preceptor should provide ongoing formative feedback.
- 7- The preceptor should provide mid and final evaluation.
- 8- Final evaluation forms are due on the last day of the rotation after being discussed with the trainee.

Site Responsibilities:

1. Orient the student to the practice site including hospital system, policy and procedure, direction, parking, etc.
2. Provide the trainee with ID to be able to enter and practice at the site.
3. Provide access to appropriate drug information resources.
4. Communicate with the hospital team/service to start the training.
5. Provide appropriate communication with PNU training and internship unit whenever needed.

Drug Information Rotation

Rotation description:

The Advanced Pharmacy Practice Experience (APPE) clinical rotation provides practical experience for the advanced clinical pharmacy master trainees to understand the scope of Drug Information (DI) services. It will develop skills to provide pharmaceutical and drug therapy information, evidence-based practice, and medication use policy services to medical, nursing, and allied health professionals as well as patients and the community as necessary.

Goals and objectives

- 1- Understand the structure and workflow of a Drug Information Service.
- 2- Be able to analyze the most appropriate drug information resources including primary, secondary, and tertiary sources for answering questions related to clinical practice. And differentiate between the secondary and tertiary information resources for specific types of drug or medical information.
- 3- Identify the appropriate search strategy for a given DI question that will result in high-quality literature retrieval.
- 4- Develop strategies for accessing information pertaining to adverse drug reactions and pharmacovigilance.
- 5- Provide concise, applicable, and timely responses to the medical staff and to work in concert with them to resolve problems related to drug therapy. (Complete at least twenty drug information requests).
- 6- Identify role of DI pharmacist in managing drug shortages, including identifying alternative treatments, developing protocol for restrictive use, and addressing formulary concerns.
- 7- Identify and prioritize new drug safety alert according to the guidelines and authorities (national and international).
- 8- Identify the role of drug information pharmacist in participating in Pharmacy and Therapeutic Committee (P&T committee).
- 9- Enhance the professional communication skills (oral and written) with medical, pharmacy & nursing staff.

Trainee Responsibilities:

- 1- Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation.
- 2- Complete all assigned tasks by the preceptor.
- 3- Provide all the required activities (e.g., in-services for health professionals or trainees, presentation, adverse drug reaction reports /medication error reporting) to the pharmacy or patient care team.
- 4- Attend on time. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence.
- 5- Demonstrate a level of maturity required in a professional practice environment: appearance, attitude and behavior.
- 6- Supervise undergrad pharmacy intern.

Preceptor Responsibilities:

- 1- A preceptor must be willing to mentor student(s).
- 2- The preceptor should orient the student to the practice site, schedule, break, evaluation method and overall responsibilities on day one of the drug information rotation.
- 3- Supervision and guidelines of trainees when handling drug information questions and consultations.
- 4- The preceptor should monitor student progress to ensure stated objectives are adequately met.
- 5- The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
- 6- The preceptor should provide ongoing formative feedback.
- 7- The preceptor should provide mid and final evaluation.
- 8- Final evaluation forms are due on the last day of the rotation after being discussed with the trainee.

Site Responsibilities:

1. Orient the student to the practice site including hospital system, policy and procedure, direction, parking, etc.
2. Provide a student ID to be able to enter and practice at the site.
3. Provide access to appropriate drug information resources.
4. Communicate with the hospital team/service to start the training.
5. Provide appropriate communication with PNU training and internship administration whenever needed.

Total Parenteral Nutrition (Clinical) Rotation

Description:

Total Parenteral Nutrition (TPN) rotation aims to provide pharmacy master trainee with general understanding of nutrition support, develop skills in patient assessment, patient monitoring, parenteral nutrition formulation, formula adjustment and preparation

Goals and objectives:

1. Evaluate the appropriateness of parenteral nutrition and goals of parenteral nutrition therapy.
2. Estimate caloric and protein requirements for a patient and formulate a parenteral nutrition plan to meet these requirements.
3. Recognize when three-in-one formulations are most appropriate to use.
4. Discuss options for controlling hyperglycemia in patients receiving parenteral nutrition.
5. Discuss normal fluid and electrolyte balance, types of specialized amino acid formulas.
6. Recognize the effects of medications on fluid and electrolyte balance.
7. Recommend adjustments in electrolyte provision and the most appropriate route for adjustments (change TPN versus change maintenance IV versus IV or PO supplemental dose).
8. Discuss monitoring parameters for patients receiving parenteral nutrition including which parameters to use, how often they are checked, and interpretation of test results.
9. Understand basic interpretation of blood gas values, especially as related to components of the parenteral nutrition formulation and appropriate changes in the parenteral nutrition formulation.
10. Recognize the general categories of enteral formulas.
11. Discuss issues related to medications and tube feeding.
12. Write chart notes using SOAP format.

Trainee Responsibilities:

1. Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation.
2. Complete all assigned tasks by the preceptor.
3. Provide all the required activities (e.g., in-services for health professionals or trainees, presentation) to the pharmacy or patient care team.
4. Attend on time. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence.

5. Demonstrate a level of maturity required in a professional practice environment: appearance, attitude and behavior.
6. Supervise undergrad pharmacy intern.

Preceptor Responsibilities:

1. A preceptor must be willing to mentor student(s).
2. The preceptor should orient the student to the practice site, schedule, break, evaluation method and overall responsibilities on day one of the hospital pharmacy rotation.
3. Supervision and guidelines for trainees.
4. The preceptor should monitor student progress to ensure stated objectives are adequately met.
5. The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
6. The preceptor should provide ongoing formative feedback.
7. The preceptor should provide mid and final evaluation.
8. Final evaluation forms are due on the last day of the rotation after being discussed with the trainee.

Site Responsibilities:

1. Orient the student to the practice site including hospital system, policy and procedure, direction, parking, etc.
2. Provide a student ID to be able to enter and practice at the site.
3. Communicate with the hospital team/service to start the training.
4. Provide appropriate communication with PNU training and internship administration whenever needed.

Pharmacovigilance Rotation

Rotation description:

This rotation is designed to provide master's-level trainees with in-depth knowledge and practical experience in the field of pharmacovigilance. Trainees will develop advanced competencies in detecting, assessing, understanding, and preventing adverse drug reactions (ADRs). The rotation focuses on enhancing skills in risk-benefit analysis, data interpretation, and reporting of ADRs within national and international frameworks.

Through this experience, trainees will engage in activities such as evaluating ADR reports, contributing to pharmacovigilance system improvements, and participating in the development and implementation of risk management plans. Emphasis is placed on building problem-solving, critical thinking, and non-technical skills, including effective communication and collaboration with healthcare professionals.

Additionally, trainees may be involved in preparing and presenting case reviews, conducting medication safety research, and participating in quality improvement initiatives as determined by the preceptor and department needs. This rotation equips trainees with the expertise to address the challenges of ensuring medication safety in evolving healthcare environments.

Goals and objectives

The Pharmacovigilance rotation allows pharmacy trainees to:

1. Understand the structure and responsibilities of pharmacovigilance within the Saudi Food and Drug Administration (SFDA).
2. Gain fundamental knowledge of pharmacovigilance principles and practices.
3. Recognize adverse drug reactions (ADRs) and their clinical significance.
4. Participate in preventive actions to mitigate ADRs when possible.
5. Identify risk factors and underlying mechanisms associated with ADRs.
6. Engage in the estimation of quantitative aspects of benefit-risk analysis and contribute to the dissemination of information to improve drug prescribing and regulation.
7. Understand the management of ADRs, including the application of effective communication skills.
8. Demonstrate the ability to report ADRs accurately and efficiently.
9. Utilize drug quality surveillance systems effectively.
10. Determine the types of ADR reporting systems available in Saudi Arabia.
11. Identify the types of ADRs that require documentation and reporting.
12. Review and assess established processes related to ADR analysis.
13. Leverage the resources of international institutions working in pharmacovigilance.
14. Exhibit professional attitudes and behaviors expected of a professional pharmacist.
15. Demonstrate self-directed learning abilities throughout the rotation.

Trainee Responsibilities

1. Attend and actively participate in daily pharmacovigilance activities.
2. Present ADR cases and provide recommendations to the preceptor.
3. Conduct medication reviews, reconciliation, and patient education as required.
4. Respond to relevant drug information inquiries from the preceptor or SFDA team.
5. Exhibit professional comportment, including appearance, attitude, and behavior.
6. Deliver at least one activity, such as an in-service session or presentation.
7. Document all interventions and ADRs accurately and thoroughly.

Preceptor Responsibilities

1. Orient the trainee to the practice site, including schedules (days and hours), breaks, evaluation methods, and overall responsibilities.
2. Assign tasks to the trainee, such as work-ups or specific pharmacovigilance-related duties.
3. Discuss pharmacovigilance management topics with the trainee.
4. Monitor the trainee's progress to ensure stated objectives are adequately addressed and achieved.
5. Provide guidance, address trainee questions, and share knowledge and skills.
6. Maintain confidentiality regarding trainee-related matters.
7. Conduct a final evaluation at the conclusion of the rotation.

Site Responsibilities

1. Provide an orientation to the practice site, including system access, policies, procedures, directions, parking, etc.
2. Issue a student ID to allow entry to the practice site.
3. Ensure system access is available to support learning objectives and rotation activities.
4. Communicate with the PNU training and internship unit as necessary.

Pharmacy Administration and Leadership Rotation

Rotation description:

This rotation serves to introduce the trainee to core elements of hospital pharmacy practice, administration functions and pharmacy leadership styles, providing them the opportunity to experience and learn from the many unique challenges facing hospital pharmacy management team in today's complex health care environment. The trainee will develop skills in the different aspects of pharmacy administration and leadership. These skills may include but are not limited to human resource management, drug monograph development, policy development, and management of drug shortages. The trainee may also participate in medication use evaluations or other projects assigned by the preceptor as determined by the needs of the department.

Goals and objectives

1. Understand the mission, vision, goals and the organizational structure of the department of pharmacy.
2. Understand the organization hierarchy and list the departments, organizations and/or businesses that the pharmacy department must work with to achieve its goals and objectives.
3. Understand the pharmacy chain of command and line of authority and responsibilities as per pharmacy departmental structure.
4. Explain various aspects of leadership, including leadership styles and management functions like planning, organizing, directing, and controlling
5. Explain the process of staff recruiting, development including pharmacy residency program (if applicable).
6. Recognize quality improvement principles and KPI management in pharmacy, to learn how to develop new ideas and approaches to improve quality or overcome barriers to advance the pharmacy department and the profession in general.
 - a. How to assign and follow up KPIs
 - b. How to conduct quality improvement projects
 - c. Complete management-focused mini projects, as assigned.
 - d. Perform information gathering and critical analysis as part of projects assigned during the experience.
7. Describe how legal, regulatory, and/or accrediting agencies affect the activities of the pharmacy department.
8. Describe the role of pharmacy administration in hospital committees: e.g
 - a. Pharmacy and therapeutic committee those roles applied but not limited to:
 - i. Describe the process for approval of treatment guideline/protocol, pre-printed medication orders and drug policy development.
 - ii. Describe the drug formulary review process including pharmacist involvement in Pharmacy and therapeutic Committee.

- iii. Understands the difference between formulary, non-formulary, patient's own medications, narcotics, controlled and investigational drugs.
 - b. Explain the pharmacy role in codes and medical emergencies in the hospital.
 - c. Medication /Patient Safety committee
 - d. Pharmacovigilance
- 9. Understand and demonstrate effective leadership skills e.g effective and appropriate written, verbal and nonverbal communication that's including how to chair/call for meeting, taking minutes and participate in hospital-wide meetings with preceptors.
- 10. Understand the basics of informatics and pharmacy automation from a managerial angle.
- 11. Understand the importance of role modeling, mentorship, continuing professional development and education policies in building pharmacy leaders.
- 12. Understand the third-party billing, legal requirements in general if applicable or tender or medication procurement decisions.

Trainee Responsibilities:

1. Contact the site education coordinator at least 2 weeks prior to the start of the rotation to help plan for the first day and discuss expectations of the experience. Inquire about introductory or review readings and site policies that they would need to know prior to orientation.
2. Complete all assigned tasks by the preceptor.
3. Provide all the required activities (e.g., in-services for health professionals or trainees, presentation) to the pharmacy or patient care team. Attend on time. Punctuality is essential. Notify the preceptor, as soon as possible, of any excuse for absence.
4. Demonstrate a level of maturity required in a professional practice environment: appearance, attitude and behavior.
5. Supervise undergrad pharmacy intern.

Preceptor Responsibilities:

1. A preceptor must be willing to mentor student(s).
2. The preceptor should orient the student to the practice site, schedule, break, evaluation method and overall responsibilities on day one of the hospital pharmacy rotation.
3. Supervision and guidelines for trainees.
4. The preceptor should monitor student progress to ensure stated objectives are adequately met.
5. The preceptor may use his/her discretion in allowing off-site experiences such as continuing education seminars, pharmacy conferences, etc. to count toward the experience requirements.
6. The preceptor should provide ongoing formative feedback.
7. The preceptor should provide a mid and final evaluation.
8. Final evaluation forms are due on the last day of the rotation after being discussed with the trainee.

Site Responsibilities:

1. Orient the student to the practice site including hospital system, policy and procedure, direction, parking, etc.
2. Provide a student ID to be able to enter and practice at the site.
3. Communicate with the hospital team/service to start the training.
4. Provide appropriate communication with PNU training and internship administration whenever needed.

Quality Control Rotation

Goals and objectives

The Quality Rotation aims to introduce the pharmacy trainee to the fundamental concept of the quality, policy, and procedure undertaken to ensure the quality of the pharmaceutical products. Additionally, it aims to enhance the pharmacy trainee experience, knowledge and skills in preventing and managing medication-related problems. Moreover, enrich trainees' knowledge with the latest advances in quality control and qualify them for leadership roles in quality control. Equip them with advanced scientific and technical expertise in quality assurance, regulatory compliance and quality control methodologies. Foster critical thinking and problem-solving skills to address complex challenges related to quality control.

Pharmacy Quality Rotation allows pharmacy intern to become familiar with:

- The fundamental concept and structure of quality control.
- Reviewing the policy and procedure undertaken to ensure the quality of the pharmaceutical products and workplace.
- Recognition of the accreditation standards and processes that the organization needs to meet.
- Identification of quality improvement tools and techniques.
- Review and the analysis of objective data and use this data to develop quality action plans.
- The participation of all regulatory inspections for the pharmacy and wards.
- The involvement in product evaluation and selection process.
- The action taken if stock is damaged, contaminated, beyond the expiry date, or has an inconsistent batch number.
- Identification of the storage requirements of different types of products and hazardous medication.
- Perceived action taken if the company recalls or drug alerts following agreed guidelines.
- Demonstration professional attitudes and behaviors that characterize a professional pharmacist.
- Demonstration self-directed learning abilities during the rotation.

Trainee Responsibilities:

1. Attending and participating in daily activities.
2. Attendance of the quality-related committees and team meetings.
3. Ensuring the product packaging, distribution, and storage meet the quality specifications.
4. Addressing and reporting product quality concerns.
5. Suggesting solutions to resolve medication-related problems.
6. Displaying professional comportment: appearance, attitude, and behavior.
7. Providing at least one activity (e.g., in-service, presentation).
8. Updating Policy and procedure and participating in quality improvement projects.
9. Recognition of the accreditation standards and processes that the organization needs to meet e.g. JCI, CBAHI, ASHP.
10. Demonstrating Root Cause Analysis (RCA) or Risk.

Preceptor Responsibilities:

1. Orientation of the trainee to the practice site, schedules (days and hours), break, evaluation methods, and overall responsibilities.
2. Assigning duties to the trainee for workup.
3. Discussion of the quality concepts with the trainee.
4. Monitoring the trainee progress to ensure that the stated objectives are adequately addressed and met.
5. Guiding and answering trainee questions and sharing knowledge and skills with the intern.
6. Maintaining trainee confidentiality.
7. Providing mid and final evaluation at the end of the week.

Site Responsibilities

1. Provide orientation to the practice site, including policies, systems, and procedures.
2. Issue a student ID to allow the trainee access to the practice site.
3. Ensure system access to support learning objectives and activities during the rotation.
4. Maintain communication with the PNU training and internship unit as necessary.

Pharmacoeconomics Rotation

Rotation description:

The Pharmacoeconomic rotation aims to introduce pharmacy trainees to the fundamental concepts of Pharmacoeconomics, including planning processes and cost-effective analysis. This rotation enhances the trainee's experience and knowledge, equipping them to make informed therapeutic decisions.

Goals and objectives

Pharmacoeconomic rotation allows pharmacy trainees to:

1. Understand the fundamental concepts and terminology of Pharmacoeconomics.
2. Identify various types of health economic evaluations, including cost-benefit analysis, cost-effectiveness analysis, and cost-utility analysis.
3. Analyze financial planning and horizon scanning for new medicines.
4. Apply sensitivity analysis techniques in pharmacoeconomic evaluations.
5. Understand decision analysis techniques for comparing alternative treatment options.
6. Develop strategies to mitigate costs associated with medication non-adherence, unused medications, or adverse drug reactions.
7. Utilize appropriate pharmacoeconomic resources and references.
8. Assess the costs of medications and therapeutic interventions.
9. Engage in drug pricing evaluations and cost comparisons.
10. Exhibit professional attitudes and behaviors that characterize a professional pharmacist.
11. Demonstrate self-directed learning abilities throughout the rotation.

Trainee Responsibilities

1. Attend and actively participate in daily pharmacoeconomic activities.
2. Participate in pharmacoeconomic-related committees and team meetings.
3. Propose solutions to minimize costs associated with unused medications.
4. Assist in assessing the costs of medical products and services.
5. Utilize appropriate pharmacoeconomic resources effectively.
6. Perform information gathering and critical analysis for assigned projects.
7. Exhibit professional comportment, including appearance, attitude, and behavior.
8. Deliver at least one activity, such as an in-service session or presentation.

Preceptor Responsibilities

1. Orient the trainee to the practice site, including schedules (days and hours), breaks, evaluation methods, and overall responsibilities.
2. Assign duties and projects to the trainee for workups.

3. Discuss quality and pharmacoeconomic concepts with the trainee.
4. Monitor the trainee's progress to ensure the stated objectives are adequately addressed and met.
5. Provide guidance, answer trainee questions, and share knowledge and skills.
6. Maintain trainee confidentiality.
7. Provide mid-rotation feedback and a final evaluation at the conclusion of the rotation.

Site Responsibilities

5. Provide orientation to the practice site, including policies, systems, and procedures.
6. Issue a student ID to allow the trainee access to the practice site.
7. Ensure system access to support learning objectives and activities during the rotation.
8. Maintain communication with the PNU training and internship unit as necessary

Clinical Research Rotation

Introduction

The research project is a longitudinal experience throughout the training year of the master program in which students engage in a research project under the mentorship of a faculty member who will follow their progress throughout the entire longitudinal experience.

Students will enroll in five weeks research project rotation for data collection. Prior to starting research, students must go through the proposal stage, during which students will develop their proposal and have it reviewed by their research advisor in the beginning of their training year. Students are not allowed to enroll in a research rotation without an approved proposal.

The objectives of the research project are to:

1. Demonstrate an understanding of the overall requirements of scientific research.
2. Illustration of an understanding and showing adequate background of the relevant research topic.
3. Implement the data collection process in a planned and well-organized manner by using appropriate data collection tool.
4. Use consent form if needed.
5. Utilize a suitable data entry system to collect and manage research data.
6. Interpreting and analyzing data.

Foster analytical thinking skills and the development of tools for rational decision making for our students.

7. Provide training in the scientific research method that will translate into future careers involving research and/or clinical practice.
8. Provide role models, mentorship, and guidance for students regarding research process.
9. Enhance the college of pharmacy culture of self-directed and peer group-fostered learning.
10. Enhance the oral and written communication skills of graduating students.

Trainee Responsibilities

1. Attend and actively participate in daily research related activities.
2. Design an appropriate method for data collection that answers the research question.
3. Participate in data collection and research team meetings.

4. Utilize a suitable data entry system to collect and manage research data.
5. Performing the research activities according to the research objectives.
6. Exhibit professional comportment, including appearance, attitude, and behavior.

Preceptor Responsibilities

1. Orient the trainee to the practice site, including schedules (days and hours), breaks, evaluation methods, and overall responsibilities.
2. Facilitate trainee in IRB approval before the rotation started and in collecting data within rotation.
3. Discuss research perceptions with the trainee to improve research skills.
4. Monitor the trainee's progress to ensure the stated objectives are adequately addressed and met.
5. Provide guidance, answer trainee questions, and share knowledge and skills.
6. Maintain trainee confidentiality.
7. Provide mid-rotation feedback and a final evaluation at the conclusion of the rotation.

Site Responsibilities

1. Provide orientation to the practice site, including policies, systems, and procedures.
2. Issue a student ID to allow the trainee access to the practice site.
3. Ensure system access to support learning objectives and activities during the rotation.
4. Maintain communication with the PNU training and internship unit as necessary.

Appendixes

Hospital Evaluation Rubric

Aligned CLOs	Standards	1	2	3	4	5
	SECTION I: SKILLS					
2.1.3	1. Identifies patient and drug-related problems based on available data, including additional appropriate information obtained from scientific literature to adequately assess pharmacotherapy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Ability to participate in processing medication orders including STAT medication orders.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	3. Participate in medication preparation, labeling and checking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	4. Participate in IV preparation and show a proper aseptic technique, cleaning, and disinfecting procedures.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	5. Correctly prepare and calculate the number of pills, ampules and active ingredients needed for IV preparation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
५,५,१	6. Utilize and familiarize with use of systems used for patient data entry, drug ordering and overall drug control.					
2.1.1	7. Identifies potential solutions to the original problem and the potential consequences of those solutions (e.g., allergy, adherence, drug shortage, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	8. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Communicate effectively with physicians, nurses, pharmacists and pharmacy technicians.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	10. Complete all rotation activities and assignments in a timely, organized, and logical manner.					
	SECTION I: VALUES					
3.1.1	11. Demonstrate professional attitude, ethical behavior, confidentiality, and cultural awareness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Demonstrate leadership and practice management skills within the multidisciplinary team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Demonstrate accountability and acceptance of responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Direct Patient Care Evaluation

Aligned CLOS	Standards	1	2	3	4	5
	<i>SECTION I: SKILLS</i>					
2.3.1	1. Review and prepare a patient chart before starting the rounds (pre-rounding).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Provide timely and appropriate recommendations to enhance patients care outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	3. Perform appropriate patient assessment and monitoring. (Including side effects, drug interactions, and therapeutic drug monitoring, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	4. Design and evaluates regimens for optimal outcomes, and incorporates pharmacokinetic, hospital formulary data, and routes of administration into the decision.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	5. Consistently and accurately identifies and prioritizes all medication-related problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	6. Use appropriate resources, and appraise scientific literature to be utilized in evidence-based practice and drug information response.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	7. Critically appraise scientific literature or patient-related information to enhance the clinical decision for the patient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	8. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Communicate effectively verbally and non-verbal within the multidisciplinary team and the patient in various settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	10. Complete all rotation activities and assignments in a timely, organized, and logical manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>SECTION II: VALUES</i>					

3.1.1	11. Demonstrate professional attitude, ethical behavior, confidentiality, and cultural awareness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Demonstrate leadership and practice management skills within the multidisciplinary team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Demonstrate accountability and acceptance of responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drug Information Evaluation

Aligned CLOs	Standards	1	2	3	4	5
	<i>SECTION I: SKILLS</i>					
2.1.1	1. Apply acquired knowledge and clinical pharmacy skills to effectively responds to DI questions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2	2. Conduct clinical pharmacy-based research by participating in the Pharmacy and Therapeutics (P&T) Committee meetings and complete a drug evaluation or class review for P&T presentation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	3. Conduct clinical pharmacy-based research by collecting and analyzing ADRs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	4. Properly obtain the required background information for a given drug information question	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	5. Appropriately appraising scientific literature to be utilized in drug information response.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	6. Identify potential solutions to the original problem and the potential consequences of those solutions (e.g., allergy, adherence, drug shortage, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7. Able to identify and prioritize new drug safety alert.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	8. Analyze collected data and apply judgment in responding to a drug information question.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	10. Provide concise, applicable, and timely responses to the medical staff and to work in concert with them to resolve problems related to drug therapy					
	<i>SECTION II: VALUES</i>					
3.1.1	11. Demonstrate professional attitude, ethical behavior, confidentiality, and cultural awareness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Demonstrate leadership and practice management skills within the multidisciplinary team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Demonstrate accountability and acceptance of responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Total Parenteral Nutrition (TPN) Evaluation Rubric

Aligned CLOs	Standards	1	2	3	4	5
	<i>SECTION I: SKILLS</i>					
2.1.1	1. Calculate the quantity of each ingredient/component needed for TPN preparation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Perform good hand hygiene and recall aseptic technique for IV preparations. related to IV compounding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	3. Perform daily progress notes on assigned parenteral nutrition patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	4. Prepare total parental nutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5. Use appropriate resources, references and appraising scientific literature to be utilized in evidence-based practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	6. Identify potential solutions to the original problem and the potential consequences of those solutions (e.g., allergy, drug interactions, drug shortage, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	7. Perform adjustments in electrolyte provision and the most appropriate route for adjustments (TPN versus maintenance IV versus IV or PO supplemental dose) and differentiate between adult/pediatric TPN guidelines and requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	8. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Communicate effectively with physicians, nurses, pharmacists and pharmacy technicians.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	10. Complete all rotation activities and assignments in a timely, organized, and logical manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>SECTION II: VALUES</i>					
3.1.1	11. Demonstrate professional attitude, ethical behavior, confidentiality, and cultural awareness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Demonstrate leadership and practice management skills within the multidisciplinary team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Demonstrate accountability and acceptance of responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pharmacovigilance Rotation Evaluation Rubric

Aligned CLOs	Standards	1	2	3	4	5
	<i>SECTION I: SKILLS</i>					
2.1.1	1. Assess Post-Authorization Observational Studies (PASS) and clinical trials to support decisions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Detect, assess, and prevent adverse drug reactions (ADRs).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	3. Critically appraise data and scientific literature for decision-making.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2	4. Identify risk factors and propose preventive strategies for ADRs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	5. Utilize appropriate technology for data access and evaluation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	6. Communicate effectively verbally and non-verbal in various settings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	7. Engage in the preparation and presentation of ADR case reviews.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	8. Complete all tasks in a timely and organized manner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	9. Demonstrate adaptability by responding to feedback and improving performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	10. Apply problem-solving skills in routine and unanticipated circumstances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>SECTION II: VALUES</i>					
3.1.1	11. Demonstrate professional attitude, ethical behavior, and confidentiality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Exhibit leadership and management skills in pharmacovigilance activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Show accountability and responsibility in assigned tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	14. Actively contribute to quality improvement initiatives or research projects to enhance patient safety and pharmacovigilance practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	15. Demonstrate self-directed learning and the ability to seek knowledge independently.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pharmacoeconomics Rotation Evaluation Rubric

Aligned CLOs	Standards	1	2	3	4	5
	SECTION I: SKILLS					
2.1.1	1. Suggest strategies to avoid the costs associated with the nonadherence medication, unused medication, and adverse drug of the medication.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Participate in assessing the cost of medication and therapeutic intervention.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	3. Utilize the appropriate pharmacoeconomic resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	4. Demonstrate initiative and creativity to identify and respond to opportunities and challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2.1	5. Use appropriate resources, references and appraising scientific literature to be utilized in evidence-based practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	6. Identify potential solutions to the original problem and the potential consequences of the suggested solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	7. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	8. Communicate effectively verbally and non-verbal in various settings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Complete all rotation activities and assignments in a timely, organized, and logical manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	10. Conduct cost-effectiveness, cost-utility, and cost-benefit analyses to support healthcare decision-making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SECTION II: VALUES					
3.1.1	11. Demonstrate professional attitude, ethical behavior, and confidentiality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	12. Exhibit leadership and management skills in Pharmacoeconomics activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	13. Show accountability and responsibility in assigned tasks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	14. Actively contribute to quality improvement initiatives or research projects to enhance healthcare outcomes and optimize resource utilization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	15. Demonstrate self-directed learning and the ability to seek knowledge independently.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Pharmacy Administration and Leadership Rotation

Aligned CLOS	Standards	1	2	3	4	5
	SECTION II: SKILLS					
2.3.1	1. Utilize appropriate relevant technology to access information resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Provide timely and appropriate recommendations to enhance problem-related outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	3. Perform appropriate situation assessment and monitoring.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	4. Design and evaluates situations for optimal outcomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	5. Consistently and accurately identifies and prioritizes all management-related problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	6. Identify potential solutions to the original problem and the potential consequences of the suggested solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	7. Use appropriate resources, to be utilized in evidence-based practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	8. Critically appraise scientific literature or related information to enhance the leadership decision.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	9. Ability to welcome constructive criticism and comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	10. Communicate effectively verbally and non-verbal within the multidisciplinary team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11. Complete all rotation activities and assignments in a timely, organized, and logical manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SECTION III: VALUES					
3.1.1	12. Demonstrate professional attitude, ethical behavior, confidentiality, and cultural awareness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	13. Demonstrate leadership and practice management skills within the multidisciplinary team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	14. Demonstrate accountability and acceptance of responsibility.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Quality Control Rotation Evaluation Rubric

Aligned CLOS	Standards	1	۲	۳	۴	۵
SECTION I: Skills						
2.1.1	1. Identify the basic principles underlying quality control, understand and participate in overall inspections process for the pharmacy and wards.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Define the policy, procedure and technique associated with the quality and participate in updating them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2	3. Demonstrate initiative and creativity by reviewing the analysis of objective data and use these data to develop quality action plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	4. Engage in assessing and monitoring the quality standers and plans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	5. Identify quality improvement tools and techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	6. Recognition of the accreditation standards and processes that the organization needs to meet e.g. JCI, CBAHI, ASHP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.2	7. Communicate effectively verbally and non-verbal in various settings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	8. Demonstrate the ability to deal with the damaged, contaminated, beyond expiry date stock or company recalls.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	9. Use appropriate resources, references to be utilized in quality control purposes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	10. Complete all rotation activities and assignments in a timely, organized, and logical manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECTION II: Values						
3.1.1	11. Demonstrates initiative and responsibility to dael with quality process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1	12. Attend all assigned meetings and show collaboration with the team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1	13. Identify potential solutions to the original problem and the potential consequences of the suggested solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	14. Demonstrates initiative and creativity to identify and respond to opportunities and challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	15. Maintains a high standard for professional behavior including punctuality, confidentiality and time management skills and demonstrates a formal and professional dress code according to the organization policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Research Rotation Evaluation Rubric

Aligned CLOS	Standards	1	2	3	4	5
	<i>SECTION I: Skills</i>					
2.1.1	1. Demonstrate an understanding of the overall requirements of scientific research.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.1	2. Illustration of an understanding and showing adequate background of the relevant research topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.2	3. Demonstrate understanding of the research questions, and able to summarize the research objectives clearly and accurately.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	4. Demonstrate an understanding of current literature (particularly research literature) related to the research topic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	5. Design an appropriate method for data collection that answer the research question.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	6. Implement the data collection process in a planned and well-organized manner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	7. Utilize a suitable data entry system to collect and manage research data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	8. Use appropriate electronic resources, references and appraising relevant scientific literature to finalize writing the literature review part.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.1.3	9. Interpreting and analyzing data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3.1	10. Performing the research activities according to the research objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<i>SECTION II: Values</i>					
3.1.1	11. Demonstrates initiative and responsibility as researcher with problem solving, critical and independent thinking.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1	12. Attend all assigned meetings and show collaboration with the team.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.1	13. Demonstrate ability to manage anonymise and safeguard clinical data (i.e. prevent leaks of sensitive data).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.1	14. Demonstrates initiative and creativity to identify and respond to opportunities and challenges.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.2	15. Maintains a high standard for professional behavior including punctuality, confidentiality and time management skills and demonstrates a formal and professional dress code according to the organization policy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Training and Internship Administration Staff & contact Info.

Training and Internship Administration

cp-tu@pnu.edu.sa

Name	Position	Phone Extension
Sahar Aldukan	Head	011 82 39362
Ghadah Alhadeib	Office Secretary	011 82 39310
Nourah Aldukhel	Office Secretary	011 82 39426