ADVANCED PHARMACY PRACTICE EXPERIENCE OBJECTIVES

Advanced Community Pharmacy

The goal of the Advanced Community Pharmacy Experience is to provide the opportunity for the student to build upon information acquired in his/her didactic and early experiential education and apply the knowledge and skills in direct patient care activities in a community pharmacy setting. The rotation will also expose the student to current corporate/independent management processes and leadership philosophy utilized at the site. The student will complete all activities in a professional manner under the facilitation of a preceptor.

Upon completion of the experience, the student will be able to:

I. Demonstrate the ability to appropriately process new and refill prescriptions.

- Utilize the patient profile to assess the prescription for allergies, drug interactions, therapeutic duplication, contraindications of use, dosage, and potential for adverse effects
- For each prescription assess appropriate:
    - Indication
    - Legality
    - Completeness
    - Dose
    - Dosage form
    - Route of administration
    - Directions of use
    - Duration of therapy
- Demonstrate the ability to communicate with prescribers and office staff when necessary regarding the processing of a prescription including the receipt and review (with preceptor) of a new prescription
- Demonstrate the ability to transfer a prescription to and from another pharmacy
- Demonstrate the ability to perform any necessary pharmaceutical calculations
- Demonstrate the ability to resolve issues regarding third party billing, prior authorizations, managed care formulary guidelines
- Develop a systematic approach to verifying the accuracy of one's own entry before final completion of the prescription

II. Demonstrate the ability to properly prepare a product for dispensing to a patient.

- Accurately select the appropriate medication to include strength, dosage form, and amount
- Using the concepts of pharmaceutics, appropriately compound non-sterile products for patient use
- Gain an understanding of pharmacy automation and central fill procedures when applicable
- Develop a systematic approach to ensure the five principles of drug delivery: *Right drug, Right patient, Right dose, Right time, Right route*

III. Communicate health information (drug, disease, other) to the patient, which shall include, but not be limited to:

- Assessment of patient's health beliefs
- Assessment of patient's health literacy
- Effective verbal communication when advising, counseling, and educating patients about their medications

Prescription medications – The student shall demonstrate the ability to:
Establish a dialogue with patients concerning medications to:

- Clarify proper medication dosing
- Clarify the directions of use
- Clarify length of therapy and refill information
- Review potential medication side effects and action(s) to be taken by the patient if/when they occur
- Clarify storage instructions of the medication
  - Verify the patient knows who to contact with questions or if specific medication-related issues arise.
  - Handle difficult patients and/or difficult situations (i.e. misfilled prescriptions)
    Counsel patients on sensitive issues

Non-prescription medications including natural products- The student shall demonstrate the ability to:

- Respond to patient's questions
- Determine if the patient is a self-care candidate using the QuEST/SCHOLAR process
- Recommend and counsel the patient on a self-care product if the patient is deemed to be a good self-care candidate
- Verify the patient knows who to contact with questions or if specific medication-related issues arise.

Non-pharmacologic:

- Develop and communicate an appropriate non-pharmacologic treatment plan (i.e. diet, exercise, sleep hygiene, home monitoring, etc.) based on patient specific factors (i.e. age, diet, work schedule, financial resources available, etc.)

IV. Participate when applicable in services provided by a pharmacist to include but not limitedto:

- Medication Therapy Management Service (MTMS)
- Collaborative Practice Agreements
- Chronic Disease State Management
- Adherence Counseling
- Immunization services
- Disease Screening/Health and Wellness programs
- Community health fairs
- Patient home visits
- MD office visits
- Screening and Brown Bag programs
- Other community outreach programs such as presentations to nursing homes
- Marketing presentations to employer and payor groups

V. Demonstrate the ability to appropriately assess patients, which shall include, but not be limited to, obtaining or discussing the following information:

- Signs and symptoms of patient complaint or disease

- Demographics
- Allergies (to include description of the reaction)
- Medication history (including previous treatments and nonprescription products)
- Available past medical, family, social, and surgical history
- Immunization history
- Adherence to a medication regimen
- Physical assessment
    - Measure basic physical assessment data (i.e. blood pressure, lipid panel, glucose, weight, height, etc.) where available and when appropriate
    - Obtain physical assessment and lab data from patient health record when record is available
- Insurance/healthcare coverage

VI. Demonstrate the ability to analyze the appropriateness of treatment (both prescription and non-prescription) for each disease, incorporating:

- Pathophysiology
- Etiology (especially drug-related causes)
- Treatment guidelines and primary literature
- Cost
- Benefits versus risks
- Lifestyle factors unique to the patient

VII. Identify and prioritize a patient's problems including the following drug relatedproblems:

- Indication
    - Unnecessary drug therapy (i.e. duplicate therapy, no indication)
    - Additional drug therapy needed (i.e. untreated indication)
- Effectiveness
    - Different product required (i.e. superior product available, therapy is not achieving goals, medication not effective for the condition being treated)
    - Dose too low [inadequate dosing frequency or duration, drug interaction (i.e. induction of metabolism), incorrect administration]
- Safety
    - Drug interaction (with another drug, natural product, disease, food, lab)
    - Contraindication (allergy, organ dysfunction, pregnant or breastfeeding, previous issue such as an adverse effect)
    - Inadequate or Inappropriate monitoring (efficacy, toxicity)
    - Dose to high [excessive dosing frequency or duration, druginteraction (i.e. inhibition of metabolism)]
- Compliance

  Inadequate patient knowledge (i.e. directions or need for medication not understood)
    - Unavailable product (i.e. not on the market, supply problems, etc.)
    - Concern about adverse effects
    - Cost
    - Patient forgets to take
    - Patient cannot tolerate dosage form

VIII. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

IX. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

X. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track the therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report identified adverse drug reactions and medication errors using the appropriate reporting system

XI. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques.
- Create an audience-appropriate response and communicate this in a timely manner.
- Document the question, response, and resources/references used on an appropriate documentation form

XII. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals, others involved in the healthcare continuum (payors, employers) and patients. Examples include but are not limited to:

- Medication and disease education
- Responses to drug information requests either verbally or in writing
- Documentation of interventions

- Communication to health care professionals regarding medication therapy plans and drug related problems
- Communication to patients summarizing their prescription coverage if applicable

XIII. Prepare and present at least one patient case presentation and deliver this to the preceptor and/or pharmacy staff.

XIV. Complete at least one of the following:

- Journal club
- A formal presentation to a community group
- Newsletter article
- Patient education document or flip chart
- Create a disease state management protocol or program

XV. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Mentoring pharmacy students currently on an early experiential site visit if applicable
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Leadership Objectives to be included:

I. Review the mission statement, strategic plans, and management plans for the pharmacy or corporation.

II. Identify the pharmacy or corporation organizational structure with respect to lines of authority, function, and responsibilities.

III. Review the pharmacy or company administrative and professional policies and procedures to include but not limited to:

- Detection, evaluation, and reporting of medication errors and adverse drug reactions
- Quality control
- Inventory control
- Budgeting and financial management
- Record keeping
- Theft reporting

IV. Review the process by which the pharmacy meets and maintains compliance with all federal and state laws and regulations that pertain to the practice of pharmacy.

V. Review key components of human resource management, including but not limited to:

- Hiring and interview process
- Personnel evaluation process
- Formal disciplinary procedures

- Staff development and training
- Development of staff schedule

VI. Identify methods of implementing, maintaining, and evaluating pharmacy services in the pharmacy or corporation.

VII. Discuss the methods for planning, implementation, and maintaining pharmacy related technology and informatics within the pharmacy or corporation.

VIII. Discuss the future trends that will impact community pharmacy services.

IX. Complete a management related or quality assurance project, for example:

- Time study
- Financial analysis
- Review and analysis of medication errors or adverse drug reactions
- Assessment of the medication use process
- Patient satisfaction survey
- Assessment of a new or existing pharmacy service

Advanced Hospital/Health System

The goal of the Advanced Hospital/Health System Pharmacy Experience is to provide the opportunity for the student to build upon information acquired in his/her didactic and early experiential education and apply the knowledge and skills in direct patient care activities in Hospital Pharmacy. The rotation will also expose the student to current corporate/independent management processes and leadership philosophy utilized at the site. The student will complete all activities in a professional manner under the facilitation of a preceptor. Upon completion of the experience, the student will be able to:

I. Demonstrate the ability to appropriately analyze and process medication orders.

- Utilize the patient profile to assess the order for allergies, drug interactions, therapeutic duplication, and potential for adverse effects
- For each medication order assess appropriate:
    - Indication
    - Completeness
    - Dose and pharmacokinetics
    - Route of administration
    - Dosage form, if injectable consider:
        - IV compatibility
        - Stability
        - Administration rate
        - Reconstitution
    - Compliance with federal/state regulations, hospital policies and procedures, including formulary restrictions
    - Duration of therapy
    - Medication safety issues (i.e. look-alike/sound alike, legibility, unapproved abbreviations)
- Demonstrate the ability to prioritize medication orders considering work load and clinical status of patients (i.e. STAT vs routine orders)
- Demonstrate the ability to perform any necessary pharmaceutical and pharmacokinetic calculations
- Develop a systematic approach to verifying the accuracy of one's own entry before final completion of the order
- Know when to discontinue and or restart medications when situations warrant per hospital policies and procedures
- Demonstrate the understanding and ability to properly use on-site technology utilized in the medication dispensing process (i.e. Robotics, bar-coding, automated dispensing cabinets)

II. Demonstrate the ability to properly prepare a product for dispensing to a patient.

- Accurately select the appropriate medication to include strength, dosage form, and amount
- By following USP 797 guidelines and appropriate aseptic technique competently compound sterile products
- Using the concepts of pharmaceutics, appropriately compound non-sterile products for patient use

- Develop a systematic approach to ensure the five principles of drug delivery: *Right drug, Right patient, Right dose, Right time, Right route*

III. Demonstrate the ability to appropriately assess patients which shall include, but not be limited to, obtaining or discussing the following information:

- Signs and symptoms of the patient complaint or disease
- Medication history (including previous treatments)
- Available past medical, family, social, and surgical history
- Medication administration review
- Data from the patient chart/medical record and/or the patient, i.e. including but not limited to vital signs, height/weight, and laboratory tests

IV. Demonstrate the ability to appropriately assess patient information to identify the following drug related problems, and as a result be able to recommend medication therapy changes:

- A problem or disease state of a patient not being treated or is not optimally treated
- A medication that a patient is receiving that is not indicated or is contraindicated
- Therapeutic duplication and/or polypharmacy
- An adverse effect(s) that may be caused by a medication(s)
- Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
- A drug interaction or potential drug interaction including interactions with labs, food, and disease states
- Inappropriate medication dose or duration of therapy (including consideration of hepatic/renal impairment, and age of the patient)
- Inappropriate route or dosage form to include consideration of IV to oraltherapy
- The patient has a medication regimen that can potentially lead to non-compliance
- A cost ineffective medication regimen

V. Demonstrate a firm understanding of drug therapy. For each drug encountered the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Cost of therapy

VI. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques
- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

VII. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing

- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plans and drug related problems

VIII. Prepare and present at least one formal presentation delivered to pharmacists or an interdisciplinary committee from the following list:

- Monograph for formulary review
- Journal club
- Patient case presentation
- Patient safety initiative
- New formulary agent overview

IX. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibits self-control in all interactions
- Maintaining confidentiality regarding patient information and displays honesty and integrity in all activities
- Arriving on time and prepared for all rotation's activities
- Mentoring pharmacy students currently on an early experiential site visit if applicable
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Leadership Objectives to be included:

I. Review the mission statement, strategic plans, and management plans of the pharmacy department.

II. Identify the departmental organizational structure with respect to lines of authority, function, and responsibilities.

III. Review the department's administrative and professional policies and procedures to include but not limited to:

- Detection, evaluation, and reporting of medication errors and adverse drug reactions
- Infection control
- Formulary system
- Emergency preparedness
- Sterile and non-sterile compounding
- Investigational drug handling

IV. Review the process by which the department meets and maintains compliance with Joint Commission and USP 797 Standards.

V. Demonstrate a working knowledge of state and federal laws pertaining to hospital pharmacy practice and how these are met by the department.

VI. Compare and contrast various fiscal budgeting, inventory control, purchasing, reimbursement systems, and financial analyses used by the department.

VII. Discuss the function of the Pharmacy & Therapeutics committee and how institutional formulary decisions are made.

VIII. Review key components of human resource management, including but not limited to:

- Hiring and interview process
- Personnel evaluation process
- Formal disciplinary procedures
- Staff development

IX. Identify methods of implementing, maintaining, and evaluating clinical pharmacy services in an institution.

X. Discuss the methods for planning, implementation, and maintaining pharmacy related technology and informatics within an institution.

XI. Attend any interdisciplinary committee meetings deemed appropriate by the preceptor.

XII. Participate in a management related or quality assurance project, for example:

- DUE or MUE
- Time study
- Financial analysis
- Review and analysis of medication errors or adverse drug reactions
- Assessment of a new or existing pharmacy service
- Patient safety initiative

Adult Acute Care/Internal Medicine

The goal of the Adult Acute Care/Internal Medicine Experience is to provide the student with experience in the pharmacotherapeutic management of adult patients with common acute and chronic medical illnesses. The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of hospitalized patient in an internal medicine environment. The student will complete all activities in a professional manner under the facilitation of a preceptor. Upon completion of the experience, the student will be able to:

I. **Demonstrate knowledge of the pathophysiology and pharmacotherapy of the common disease states seen in patients in an acute care/internal medicine setting. This includes but not limited to disorders of the following:**
   - Cardiovascular
   - Pulmonary
   - Endocrine
   - Renal
   - Gastrointestinal
   - Neurology/Psychiatry
   - Immunity/Infectious Disease

II. **Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of assigned patients by:**
   - Utilizing current and past health records, patient interviewing, and interactionwith other health care professionals to obtain any or all of the following information:
     - Signs and symptoms of the patient complaint or disease
     - Physical assessment
     - Available past medical, family, social, and surgical history
     - Laboratory values
     - Tests and procedures
     - Medication history both past and current
   - Performing and relevant physical assessments not otherwise available

III. **Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:**
   - A problem or disease state of a patient not being treated or is not optimally treated
   - A medication that a patient is receiving that is not indicated or is contraindicated
   - Therapeutic duplication and/or polypharmacy
   - An adverse effect(s) that may be caused by a medication(s)
   - Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
   - A drug interaction or potential drug interaction including interactions with labs, food, and disease states
   - Inappropriate medication dose or duration of therapy (including consideration of hepatic/renal impairment, and age of the patient)
   - Inappropriate route or dosage form
   - Non-adherence to a prescribed medication(s)

IV. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

V. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

VI. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track the therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report adverse drug reactions and medication errors usingthe appropriate reporting system

VII. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in adults.

- Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications and food
- Assist in facilitating patient transition from one care setting to another by communicating the pharmaceutical care plan to another pharmacist and or health care provider(s)
- Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

VIII. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques

- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

IX. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing
- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plans and drug related problems

X. Prepare and present at least one patient case presentation delivered to pharmacists or the health care team.

XI. Prepare and present at least one journal club article delivered to pharmacists or the health care team.

XII. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Ambulatory Care

The goal of the Ambulatory Care rotation is to provide the student with experience in the pharmacotherapeutic management of adult patients with common chronic medical illnesses. The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of the patient in an ambulatory care setting. The student will complete all activities in a professional manner under the facilitation of a preceptor. Upon completion of the experience, the student will be able to:

I. **Demonstrate knowledge of the pathophysiology and pharmacotherapy of the common disease states or medical conditions seen in patients in an ambulatory care setting. This includes the following:**
   - **Key conditions required for review:**
     - Hypertension, Diabetes, Dyslipidemia, Anticoagulation, COPD/Asthma
   - **Other conditions to review include but not limited to:**
     - Congestive heart failure
     - PUD/GERD
     - Depression
     - Pain management
     - Osteoporosis
     - Hematologic disorders
     - Rheumatoid arthritis
     - Thyroid disorders
     - Gout
     - Seizures

II. **Demonstrate knowledge and participate when applicable in services provided by a pharmacist in an ambulatory care setting to include but not limited to:**
   - Medication counseling
   - Medication reconciliation
   - Medication therapy management service (MTMS)
   - Collaborative practice agreements
   - Chronic disease state management
   - Adherence counseling
   - Immunization services
   - Disease prevention/health wellness

III. **Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of assigned patients by:**
   - Utilizing current and past health records, patient interviewing, and interaction with other health care professionals to obtain any or all of the following information:
     - Signs and symptoms of the patient complaint or disease
     - Physical assessment
     - Available past medical, family, social, and surgical history
     - Laboratory values
     - Tests and procedures
     - Medication history both past and current
   - Performing relevant physical assessments not otherwise available

IV. Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:

- A problem or disease state of a patient not being treated or is not optimally treated
- A medication that a patient is receiving that is not indicated or is contraindicated
- Therapeutic duplication and/or polypharmacy
- An adverse effect(s) that may be caused by a medication(s)
- Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
- A drug interaction or potential drug interaction including labs, food, and disease states
- Inappropriate medication dose or duration of therapy (with consideration of hepatic/renal impairment, and age of the patient)
- Inappropriate route or dosage form
- Non-adherence to a prescribed medication(s)

V. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

VI. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

VII. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report adverse drug reactions and medication errors usingthe appropriate reporting system

VIII. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in adults.

- Describe the role of the pharmacist as an educator in the ambulatory care setting
- Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications, natural products, and food
- Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

IX. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques
- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

X. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing
- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plans and drug related problems

XI. Prepare and present at least one patient case presentation delivered to pharmacists and/or other health care professionals.

XII. Complete at least one of the following:

- Journal club
- Creation of guidelines of medication use within the practice
- A drug utilization review for the practice
- A formal presentation to a group of patients or health care professionals
- Newsletter article
- Peer reviewed article or patient case for potential publication
- Patient education document

XIII. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Underserved

The goal of the Underserved Rotation is for the student to develop experience in the provision of care to those who face barriers to timely access to health services which provide the best health outcomes. The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of the patient in an underserved care setting. The student will complete all activities in a professional manner under the facilitation of a preceptor.
Upon completion of the experience, the student will be able to:

I. **Demonstrate knowledge of the challenges and opportunities of providing pharmaceutical care to underserved patients.**
   - Demographic and economic characteristics of underserved patients in this setting
   - Common acute and chronic medical disorders seen in underserved patients in this setting
   - Social, medical, prescription assistance service available to the underserved patient in this setting

II. **Demonstrate knowledge and participate when applicable in services provided by a pharmacist in an underserved care setting to include but not limited to:**
   - Medication counseling
   - Medication Therapy Management service
   - Chronic Disease State Management
   - Adherence counseling
   - Immunization services
   - Device teaching
   - Disease Prevention/Health Wellness
   - Medication dispensing
   - Assisting a patient in identifying and applying for a specific prescription assistance program

III. **Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of underserved patients by:**
   - Utilizing current and past health records, patient interviewing, and interactionwith other health care professionals to obtain any or all of the following information:
     - Signs and symptoms of the patient complaint or disease
     - Physical assessment
     - Available past medical, family, social, and surgical history
     - Laboratory values
     - Tests and procedures
     - Medication history both past and current
   - Performing and relevant physical assessments not otherwise available

IV. **Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:**
   - A problem or disease state of a patient not being treated or is not optimally treated
   - A medication that a patient is receiving that is not indicated or is contraindicated
   - Therapeutic duplication and/or polypharmacy
   - An adverse effect(s) that may be caused by a medication(s)

- Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
- A drug interaction or potential drug interaction including interactions with labs, food, and disease states
- Inappropriate medication dose or duration of therapy (including consideration of hepatic/renal impairment, and age of the patient)
- Inappropriate route or dosage form
- Non-adherence to a prescribed medication(s)

V. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

VI. Assess patient medication adherence and develop strategies for improving adherence in underserved patients.

VII. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

VIII. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track the therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report identified adverse drug reactions and medication errors using the appropriate reporting system
- Medication adherence

IX. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in underserved patients.

- Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications and food
- Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

X. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques
- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

XI. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing
- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plansand drug related problems

XII. Complete at least one of the following:

- Patient case presentation
- A formal presentation to a group of underserved patients
- Journal club presentation

XIII. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Geriatrics

The goal of the Geriatrics Experience is to provide the student with experience in the pharmacotherapeutic management of elderly patients with common acute and chronic medical illnesses. The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of the patient in a geriatric setting. The student will complete all activities in a professional manner under the facilitation of a preceptor.

Upon completion of the experience, the student will be able to:

I. Describe the general principles of aging to include the following:

- Demographic and economic characteristics of seniors (i.e. gender, ethnicity, geographic, socioeconomic, and population)
- Biology and theories of aging
- Socioeconomics of aging including ethical issues, economic issues, elder abuse,and cultural competencies
- Social and medical services available to seniors, including home health servicesand geriatric institutions

II. Describe the physiologic changes associated with aging and how they impact medication therapy to include:

- Pharmacokinetic alterations associated with aging including absorption, distribution, metabolism, and excretion of drugs
- Pharmacologic alterations of aging in terms of altered receptor and organ sensitivities and homeostasis
- Factors that predispose the geriatric patient to adverse drug reactions and identify those drugs to which seniors are particularly sensitive
- Common drug interactions seen in the geriatric patient and factors which predispose them to these interactions
- The medication adherence problems in the geriatric patient and modalities to promote proper use of drugs by the patient

III. Demonstrate knowledge of the pathophysiology and pharmacotherapy of the common disease states seen in the geriatric population. This includes but not limited to the following disorders:

- Cardiovascular
- Pulmonary
- Endocrine
- Renal and Urologic
- Gastrointestinal
- Neurology/Psychiatry
- Immunity/Infectious Disease
- Musculoskeletal
- Nutritional/Hydration
- Ophthalmology

IV. Discuss the potential etiology, prevention and management of the common syndromes or problems seen in the geriatric patient to include but not limited to the following:

- Mobility Deficiencies and Falls

- Pain
- Anxiety
- Insomnia
- Depression
- Cognitive decline
- Delirium
- Behavioral and psychological symptoms of dementia
- Altered Elimination
- Altered nutrition and weight disorders
- End of Life Issues

V. Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of assigned geriatric patients by:

- Utilizing current and past health records,patient/family interviewing, and interaction with other health care professionals to obtain any or all of the followinginformation:
    - Signs and symptoms of the patient complaint or disease
    - Physical assessment
    - Available past medical, family, social, and surgical history
    - Laboratory values
    - Tests and procedures
    - Medication history both past and current
- Performing and relevant physical assessments not otherwise available

VI. Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:

- A problem or disease state of a patient not being treated or is not optimally treated
- A medication that a patient is receiving that is not indicated or is contraindicated
- Therapeutic duplication and/or polypharmacy
- An adverse effect(s) that may be caused by a medication(s)
- Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
- A drug interaction or potential drug interaction including interactions with labs, food, and disease states
- Inappropriate medication dose or duration of therapy (including consideration of hepatic/renal impairment, and age of the patient)
- Inappropriate route or dosage form
- Non-adherence to a prescribed medication(s)

VII. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity

- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

VIII. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

IX. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track the therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report identified adverse drug reactions and medication errors using the appropriate reporting system

X. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in geriatrics.

- Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications and food
- Assist in facilitating patient transition from one care setting to another by communicating the pharmaceutical care plan to another pharmacist and or health care provider(s)
- Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

XI. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques
- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

XII. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing
- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plans and drug related problems

XIII. Complete at least one of the following:

- Patient case presentation
- Journal club
- Medication or guideline review

XIV. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning

Pediatrics

The goal of the Pediatrics Experience is to provide the student with experience in the pharmacotherapeutic management of pediatric patients with common acute and chronic medical illnesses. The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of the patient in a pediatric setting. The student will complete all activities in a professional manner under the facilitation of a preceptor.

Upon completion of the experience, the student will be able to:

I. **Describe the anatomical and physiological differences between the pediatric and adult patient and how these impact medication therapy to include:**
   - Growth and development changes of the child at various ages (i.e. premature, neonate, infant children, adolescents) and how this influences drug therapy
   - Pharmacokinetic alterations associated with pediatrics including absorption, distribution, metabolism, and excretion of drugs
   - Factors that predispose the pediatric patient to adverse drug reactions and identify those drugs to which pediatrics are particularly sensitive too.
   - Common drug interactions seen in the pediatric patient and factors which predispose them to these interactions
   - The medication adherence problems in the pediatric patient and modalities to promote proper use of drugs by the patient.

II. **Demonstrate knowledge of pathophysiology and pharmacotherapy of the common disorders seen in the pediatric population. This includes but not limited to disorders of thefollowing:**
   - Cystic fibrosis
   - Asthma
   - Infectious diseases (otitis media, meningitis, sepsis, HIV)
   - Seizures
   - Fluid & Electrolyte disorders
   - Hematological disorders
   - Nutritional disorders
   - Pain
   - Toxicology /Poisonings

III. **Describe the appropriate immunization schedules required in specific pediatric patient populations.**

IV. **Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of assigned pediatric patients by:**
   - Utilizing current and past health records,patient/family interviewing, and interaction with other health care professionals to obtain any or all of the followinginformation:
     - Signs and symptoms of the patient complaint or disease
     - Physical assessment
     - Available past medical, family, social, and surgical history
     - Laboratory values
     - Tests and procedures
     - Medication history both past and current
   - Performing and relevant physical assessments not otherwise available

V. Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:

- A problem or disease state of a patient not being treated or is not optimally treated
- A medication that a patient is receiving that is not indicated or is contraindicated
- Therapeutic duplication and/or polypharmacy
- An adverse effect(s) that may be caused by a medication(s)
- Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
- A drug interaction or potential drug interaction including interactions with labs, food, and disease states
- Inappropriate medication dose or duration of therapy
- Inappropriate route or dosage form
- Non-adherence to a prescribed medication(s)

VI. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

- State the desired and achievable pharmacotherapeutic goals for each identified problem
- Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
- Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy
- Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
- Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

VII. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:

- Pharmacology
- Pharmacokinetics
- Dose and routes of administration
- Contraindications and precautions
- Adverse reactions
- Interactions (drugs, dietary supplements, food, laboratory, disease)
- Monitoring parameters for efficacy and toxicity
- Key patient education talking points
- Cost of therapy

VIII. Demonstrate the ability to properly determine the correct dose of a medication for a pediatric patient.

- Utilization of appropriate pediatric drug references to determine the dose of a particular medication (including over the counter medications)
- Accurately calculate appropriate medication doses for pediatric patients to include surface pharmacokinetic and body surface area calculations
- Determine appropriate route of administration for various medications used in pediatric patients
- Recommend dosage forms or specials compounds for medications not available ina form for pediatric us

IX. Demonstrate the ability to measure and document patient outcomes.

- Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
- Measure, record, and appropriately track the therapeutic response and toxicity
- Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
- Identify, assess, and report identified adverse drug reactions and medication errors using the appropriate reporting system

X. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in pediatrics.

- Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications and food
- Assist in facilitating patient transition from one care setting to another by communicating the pharmaceutical care plan to another pharmacist and or health care provider(s)
- Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

XI. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.

- Identify the specific question using appropriate techniques
- Create an audience-appropriate response and communicate this in a timely manner
- Where applicable document the question, response, and resources/references used

XII. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:

- Patient disease and medication counseling
- Responses to drug information requests either verbally or in writing
- Documentation of interventions through the utilization of the standard SOAP note format
- Communication to the health care professionals regarding medication therapy plans and drug related problems

XIII. Complete at least one of the following:

- Patient case presentation
- Journal club
- Medication or guideline review

XIV. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

- Maintaining a professional manner in both appearance and behavior at all times
- Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
- Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
- Arriving on time and prepared for all rotation activities
- Demonstrating the ability to complete assignments in an accurate and timely manner
- Developing the habits consistent with life-long learning.

Academia (Experiential)

Overall, this rotation should be designed in such a way to provide the student with an overall appreciation for the core elements associated with academia: education, service, and research. These independent areas are the backbone metrics of how faculty are evaluated upon each yearly assignments and responsibilities. As such, the APPE experience should incorporate these elements for students.
The structure of the rotation will need to afford some flexibility and individuality of each student to find their area(s) of interest in order to work independently to satisfy the APPE's learning objectives. Some work will need to be conducted at the beginning of the rotation (preparing teaching materials) and approval of independent project development. The learning objectives have been arranged in such a way to provide students with a wide variety of experiences that are beneficial to the student's growth and to the department and the students they work closely with. Upon completion of the experience, the student will be able to:

I. Describe the anatomical and physiological differences between the pediatric and adult patient and how these impact medication therapy to include:

- Review History of Experiential Education.
- 2016 ACPE Standards regarding experiential education.
    - Standard 10: Curricular Design, Delivery and Oversight.
    - Standard 11: Interprofessional Education.
    - Standard 12: Pre-APPE Curriculum (standards for IPPEs).
    - Standard 13: APPE Curriculum.
    - Standard 20: Preceptors.
    - Standard 22 Practice Facilities/Sites.
- Challenges in Experiential Education
    - Number of qualified sites/preceptors to meet demand of the program.
    - Ensuring beneficial learning experiences for students.
    - Other challenges: practice-based faculty, preceptor development, collaboration.
- Preceptor Requirements for NEOMED

II. Work with preceptor and other faculty advisers to conduct off-site, in-person visits

- Review site visit RAFT (Rapport–Assessment– Follow-up – Thank you/Trinket) protocol with student.
- Familiarize the student with evaluation tool – origin/use.
- Have student write a reflection on the experience.

III. Participate in experiential education department meetings and guidance procedures

- Attend Bi-Weekly department meetings.
- Assist team in completing tasks assigned by the EE Team.

IV. Select an area of interest to teach didactic material and/or lead small group activity

- Develop a schedule for student to meet with different course director to include student in teaching opportunities – review upcoming courses.

V. Engage faculty to develop 1-2 independent project(s) with stated goals and outcomes

- Develop a schedule for the student to meet with different academic areas: Office of Education, Office of Assessment, Office of Student Success and Director of Pharmacotherapy to assist in identifying projects.

VI. Participate with 1 student group/organization each month, serving as a student mentor

- Review student group/organization schedule to allow the academic student to participate.

VII. Present a defined, approved clinical question or research topic to preceptor

VIII. Support needs and agenda of the overarching pharmacy practice department

- Work with Dr. Soric.

Themes:

1. Teaching and develop/facilitate active learning through didactic education
2. Precepting and participate in the experiential education process
3. Mentoring and serve students' needs through programs and extracurricular involvement
4. Evaluating and offering perspective and advocate for testing and grading policies
5. Assuring and participate in quality assurance and evaluation of student success metrics
6. Exploring and develop an independent project and present upon completion of rotation
7. Advocating and integrate into an existing service opportunity (SOAR clinic)

Clinical Patient Care Selective

The goal of a clinical patient care selective is to provide the student with experience in the pharmacotherapeutic management of patients in a specialized clinical setting/service (i.e. infectious disease, critical care, psychiatry). The activities of the experience are to build upon information acquired in a student's didactic education and develop skills related to assessment and drug therapy management of patients in these types of settings. The student will complete all activities in a professional manner under the facilitation of a preceptor.
Including elective specific objectives determined by the preceptor, the student should upon completion of the experience be able to:

a. Demonstrate knowledge of the pathophysiology and pharmacotherapy of the common disease states or disorders seen in patients in the elective setting. These disorders are to be determined by the preceptor.

b. Develop and implement a systematic approach to gathering, organizing and prioritizing pertinent data of assigned patients by:

a. Utilizing current and past health records, patient interviewing, and interaction with other health care professionals to obtain any or all of the following information:
   - Signs and symptoms of the patient complaint or disease
   - Physical assessment
   - Available past medical, family, social, and surgical history
   - Laboratory values
   - Tests and procedures
   - Medication history both past and current

b. Performing and relevant physical assessments not otherwise available

c. Identify and prioritize the health /medical problems including the following drug related problems in the assigned patients:

a. A problem or disease state of a patient not being treated or is not optimally treated
b. A medication that a patient is receiving that is not indicated or is contraindicated
c. Therapeutic duplication and/or polypharmacy
d. An adverse effect(s) that may be caused by a medication(s)
e. Inappropriate or missing medication monitoring parameters (efficacy, toxicity, pharmacokinetics)
f. A drug interaction or potential drug interaction including interactions with labs, food, and disease states
g. Inappropriate medication dose or duration of therapy (including consideration of hepatic/renal impairment, and age of the patient)
h. Inappropriate route or dosage form
i. Non-adherence to a prescribed medication(s)

d. Develop a pharmaceutical care plan to manage a patient's identified health/medical problems including drug related problems. The plan should:

a. State the desired and achievable pharmacotherapeutic goals for each identified problem
b. Provide appropriate pharmacologic and non-pharmacologic treatment recommendations supported by primary literature and or in accordance with known established clinical guidelines
c. Consider factors such as comparative efficacy, pharmacokinetics, toxicity, appropriate dosage form, adherence, formulary, and cost of therapy

d. Include a drug therapy monitoring plan that states the parameters to be measured and frequency of measurement, including measures of therapeutic response and toxicity
e. Be communicated to the patient and other members of the health care team in an accurate, concise and timely manner, and where appropriate, written in an audience-appropriate format

e. Exhibit a firm understanding of drug therapy. For each pharmacotherapeutic option the student should be familiar with the following:
a. Pharmacology
b. Pharmacokinetics
c. Dose and routes of administration
d. Contraindications and precautions
e. Adverse reactions
f. Interactions (drugs, dietary supplements, food, laboratory, disease)
g. Monitoring parameters for efficacy and toxicity
h. Key patient education talking points
i. Cost of therapy

f. Demonstrate the ability to measure and document patient outcomes.
a. Implement the pharmaceutical care monitoring plan to determine the outcome(s) of drug therapy
b. Measure, record, and appropriately track the therapeutic response and toxicity
c. Modify the pharmaceutical care plan appropriately based on data collected from patient monitoring or when other data becomes available
d. Identify, assess, and report identified adverse drug reactions and medication errors using the appropriate reporting system

g. Educate patients, caregivers, and health care professionals regarding the appropriate use of drugs in common acute and chronic medical illnesses in adults.
a. Implement patient-specific education plans. These plans should include purpose, directions for use/administration, storage, potential adverse effects and potential interactions with other medications and food
b. Assist in facilitating patient transition from one care setting to another by communicating the pharmaceutical care plan to another pharmacist and or health care provider(s)
c. Educate professional colleagues, including pharmacists, physicians, and nurses regarding drug therapy using formal or informal methods.

h. Demonstrate the ability to use the most appropriate resources to respond to drug information questions from patients and health care professionals in an accurate and timely manner.
a. Identify the specific question using appropriate techniques
b. Create an audience-appropriate response and communicate this in a timely manner
c. Where applicable document the question, response, and resources/references used

i. Demonstrate the ability to effectively communicate, both in writing and verbally, with health care professionals and patients. Examples include but are not limited to:
a. Patient disease and medication counseling
b. Responses to drug information requests either verbally or in writing
c. Documentation of interventions through the utilization of the standard SOAP note format

d. Communication to the health care professionals regarding medication therapy plans and drug related problems

j. Complete at least one of the following:

a. Patient case presentation
b. Journal club
c. Medication or guideline review

k. Conducts oneself in a professional and ethical manner when interacting with patients and health care professionals by:

a. Maintaining a professional manner in both appearance and behavior at all times
b. Demonstrating courtesy and respect towards others and exhibiting self-control in all interactions
c. Maintaining confidentiality regarding patient information and displaying honesty and integrity in all activities
d. Arriving on time and prepared for all rotation activities
e. Demonstrating the ability to complete assignments in an accurate and timely manner
f. Developing the habits consistent with life-long learning