Introduction

The rotation is designed to develop the clinical pharmacist’s knowledge and skills in pharmaceutical care of the trauma/surgical patient; especially as they relate to the application of therapeutic principles in the critically ill patient. Problem identification, problem solving, healthcare team interaction, communications skills, patients interactions, documentation of consultations, application of pharmacokinetics, and provision of drug information are emphasized through daily encounters with patients and the trauma team.

Goal

To actively participate in the decision-making process to achieve positive patient outcomes that relate to pharmacotherapy and medications used to treat the patients.

Objectives

Given the chart and medication administration record (or a two to three page patient summary), the student shall be able to:

1. Identify potential and real drug and disease-related problems
2. Assess the clinical significance of drug-related problems by prioritizing the problem list
3. Select appropriate goals for resolution of the identified problems including etiology, severity, pharmacotherapy, prevention of problem progression, prevention of complications of treatment, and prevention of problem reoccurrence
4. Develop a plan and appropriate monitoring parameters to meet each of the stated goals
5. Identify appropriate interventions for each of the stated problems
6. Monitor outcomes and make appropriate changes to meet those outcomes

Team Information:

There are two main teams which you will interact with. The Surgical ICU (5301) team and the Trauma Team (Surgery Team 3).

The Trauma Team is led by the trauma attending MD. The hierarchy then continues with the Chief Resident (PGY 5-6), Surgical Resident (PGY 2), Surgical Intern (PGY 1) and Emergency Medicine Intern (PGY 1). This team follows all trauma patients in the hospital. They also are the vascular and thoracic consult team (you may or may not be requested to follow these patients.)

The SICU team is led by a Surgical attending 3 weeks of the month, and an Anesthesia attending the 4th week. The residents on the team are usually one Surgical resident (PGY2), and two Anesthesia residents (PGY 2-3). This team follows all surgical patients (GNS, Trauma, ENT, Orth, NUS, etc) in the ICU and intubated patients in the Burn unit.

Activities and responsibilities
To achieve the Goal and Objectives of the rotation, the following activities and responsibilities describe the student's role in the rotation:

1. **Rounds**
   The student must attend daily rounds with the assigned team. The student must also attend rounds or be present to update profiles, answer questions, etc. at least one day of every weekend (the purpose of this is to maintain current on the status of the patient and to demonstrate commitment to the patients and the team). Grand rounds and other conferences should be attended (if time is allowed) unless the subject matter is not of sufficient interest as determined jointly by the faculty member and student.

2. **Maintain a current patient profile**
   A patient profile (derived from the chart, progress notes, and MAR) is expected to be maintained for EACH patient on the service. This profile must be updated daily so that ready reference can be made to the drug list and appropriate therapeutic and laboratory monitoring parameters. This profile is useful for rounds when an exact list of patients' current medications is desired and for discussion of the patients with instructors. Appropriate demographic information must also be obtained.

3. **Documentation**
   - **Consultations** - The student will document consultations using Wishard Pharmacy Dept intervention program, or Clinitrend (depending on which is available/current at the time). Each consultation will be documented and reviewed by the faculty.
   - **Pharmaceutical Care Plans** - A "Pharmaceutical Care Plan" will be required for three patients during the rotation. Additional care plans may be assigned for unsatisfactory performance as evaluated by the instructor. These need not be typed; however, MUST be written legibly.
   - **Adverse Drug Reactions** - The students will document adverse drug reactions occurring in his/her patients using the Wishard Hospital ADR Reporting Form and/or hotline (630-2426).

4. **Dosing Services**
   Interact with the decentral pharmacists to explore and solve potential or real problems.
   - **Calculate dosage regimens** - Students who have patients who are receiving aminoglycosides, vancomycin, dilantin, etc. are responsible for notifying the instructor so that they can discuss the pharmacokinetic monitoring and dosage calculations for each individual patient. The students are responsible for calculating pharmacokinetic parameters.

5. **Meeting with Primary Faculty**
   - **Purpose** - To review the student's individualized patient history, problem list, care plan outline, and proposed interventions including pharmacokinetic and nutritional recommendations for each patient.
Description - Daily discussions between the student and instructor will be held. Selected topics will form the basis for discussions although individual patients and other topics may be considered. The student will prepare himself/herself to sufficient depth of knowledge to be able to lead the discussion of the topic. Some proposed topics include but are not limited to:

- Acid/Base
- Analgesia/Sedation/NMB
- Antibiotics
- Closed head injury
- Hemodynamics
- ICU prophylaxis and complications
- Nutrition
- Pharmacokinetics/pharmacodynamics
- Renal Failure
- Surgical prophylaxis
- ACLS drugs

When - At variable daily times depending on the student's team rounds, and the instructor’s daily schedule. The student has the responsibility to maintain this meeting schedule.

Evaluation - The student's week to week progress will be monitored and reported to the student verbally at the end of each week and in writing according to the school's course manual.

7. Meeting with other faculty/students
   In an attempt to provide an interactive and well-rounded experience for the student, the various faculty have arranged meeting times for open case discussions among the students, and topic discussions presented by the faculty. The dates/times/location of these will be made available to the student during the first week of rotation.

8. Patient education
   For patients who may have difficulty in following their prescribed drug regimen, a patient education session will be arranged to attempt to increase the patient's knowledge and understanding of his/her drugs. The student would provide this service after notifying the instructor and the patient’s nurse.

9. Oral Presentation
   Purpose – An oral presentation will be held for each student during the third week of the rotation to assess the student’s ability to research a selected topic and present the material in a concise manner.

   Description – The student will present a 20 – 25 minute presentation to members of the pharmacy department, other faculty and students, as well as the health care team. The student will be responsible for selecting an appropriate topic to present with the aid of flip chart, overhead projector, slides, or computer generated presentation. Included in this presentation will be a review and critique of literature.

   When – Sometime during the third week of the rotation, the presentation may be repeated prior to the end of the rotation for an unsatisfactory performance. The student must discuss topic selection with the instructor by the end of the first week. The instructor may waive the presentation based on prior presentations performance as seen in the student’s portfolio, or based on projects assigned by the instructor.

   Evaluation - The student will present to the instructor as well as other department staff. Although more than one instructor may be present and complete an evaluation, the student's primary instructor will assign pass/fail status.
10. Oral Examination

**Purpose** - An oral end-of-block examination will be administered during the final week of the rotation to assess the student's ability to integrate data from the patient care setting.

**Description** - Forty-five minutes prior to the exam the student will receive a written patient case. The student will assess the patient's current treatment regimen and then develop an outline of a care plan for the patient. The care plan outline will include the pharmacy problem list, treatment goals, plan, monitoring parameters, and interventions. The pharmacy student will design consultations that improve the patient's care.

**When** - During the last week of the rotation, the exam may be repeated the following day for an unsatisfactory performance.

**Evaluation** - The student will present the care plan outline and consultations to his/her instructor. Although more than one instructor may be present, the student's primary instructor will assign pass/fail status.