**Surgical Intensive Care Unit - EUH**

Preceptor: Alley Killian, PharmD

Office: EUH, E wing, 9th floor, room E923

Hours: ~ 8:00 - 4:30

Desk: 404-712-0816

Pager: 14124

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ICU Phone Number: 404-712-4041

**General Description**

The Surgical Intensive Care Unit (SICU) rotation is a 4 week surgery/critical care learning experience at Emory University Hospital. The goal of the rotation is to enable the resident to develop knowledge and skills necessary for the provision of pharmaceutical care to critically ill patients.

The SICU is a 20 bed unit for critically ill general surgery, kidney and liver transplant, otolaryngologic surgery, surgical oncology, and urologic surgery patients. The multidisciplinary team consists of an attending critical care intensivist (anesthesiology, pulmonary medicine, or surgery), anesthesia residents, emergency medicine residents, surgery residents, medical students, nurse practitioners, physicians assistants, a clinical pharmacy specialist, pharmacy students, and respiratory therapists. The unit is split into 2 rounding teams: the resident team and the mid-level team. The residents are assigned to the patients that provide the best teaching cases to be discussed on rounds and the mid-level providers see the remaining patients. Resident rounds take place every morning at 8:30am and are followed by mid-level rounds. Check-out rounds occur in the afternoon (timing is attending specific).
Pharmacy resident responsibilities include:

- Daily SICU multidisciplinary rounds (including both resident and mid-level rounds)
- Attendance at medical team topic discussions as scheduling allows
- Attendance at Anesthesia/Critical Care Conference every Wednesday from 7:30am-8:30am in the Galvin Room (Anesthesia Department)
- Attendance at Surgical Grand Rounds every Thursday from 7:00am-8:00am in the EUH Auditorium (topic dependent)
- Patient profile review with identification and resolution of medication related issues
- Provide assistance with medication order entry, order review and other clarification as needed
- Resource for the coordination of distribution problems not resolved by in-patient pharmacy
- Provide and document therapeutic drug monitoring (pharmacokinetics) services for all patients in the SICU receiving aminoglycosides, vancomycin, phenytoin (and other anti-epileptic drugs), warfarin, enoxaparin, heparin, argatroban, and fondaparinux; documentation must be completed within the electronic medical record on the day service was provided
- Participation in Dr. 99 codes that occur in the SICU

Attention to detail, excellent communication and interpersonal skills are critical to the successful completion of this learning experience. Patient acuity is very high and clinical status can often change quickly requiring reassessment of therapeutic regimens and monitoring plans on an ongoing basis. The resident must assume complete responsibility for patient care and assure desired drug therapy outcomes. The resident must devise efficient strategies for accomplishing the required activities in a limited time frame. In addition to patient care, the resident must provide education to the team or pharmacists as the need arises. At least one educational presentation is required to be presented to the team and/or nursing staff during the learning experience.

**Disease States**

Disease states in which the resident will be expected to gain proficiency through literature review, topic discussion, and/or direct patient care experience include, but are not limited to:

- ICU analgesia, sedation and neuromuscular blockade
- ICU delirium
- Alcohol withdrawal and other drug withdrawal states
- Hemodynamic monitoring with the use of inotropic/vasoactive agents
- Basic ECG analysis and arrhythmia management (specifically ACLS protocols and atrial fibrillation)
- Basic principles of mechanical ventilation
- Acute respiratory distress syndrome/acute lung injury (ARDS/ALI)
- Acid-base disturbances
- Fluid and electrolyte management
- Glycemic control in the ICU
- Acute kidney injury (dialysis modalities and drug dosing)
- Nutritional support for critically ill patients
- Prevention and management of stress-induced bleeding
- Acute gastrointestinal bleeding
- Fulminant hepatic failure and end stage liver disease
- Pancreatitis
- Post-operative management of liver, pancreas, and renal transplantation and their complications
- Prevention and treatment and deep venous thrombosis and pulmonary embolism
- Hematologic disorders
- Systemic inflammatory response syndrome (SIRS)/severe sepsis/septic shock
- Post-operative infectious complications
- Nosocomial infections and antimicrobial use in critically ill patients
- Pharmacokinetics in critically ill patients
- Acute overdoses (specifically acetaminophen)

**Goals Selected**

Goals selected to be taught and evaluated during this learning experience include:

- Goal R2.1: As appropriate, establish collaborative professional relationships with members of the health care team.
- Goal R2.2: Place practice priority on the delivery of patient-centered care to patients.
- Goal R2.4: Collect and analyze patient information.
- Goal R2.6: Design evidence-based therapeutic regimens.
- Goal R2.7: Design evidence-based monitoring plans.
- Goal R2.8: Recommend or communicate regimens and monitoring plans.
- Goal R2.9: Implement regimens and monitoring plans.
- Goal R2.10: Evaluate patients’ progress and redesign regimens and monitoring plans.
- Goal R2.12: Document direct patient care activities appropriately.
- Goal R5.1 Provide effective medication and practice-related education, training, or counseling to patients, caregivers, health care professionals, and the public.

**Activities**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Goal</th>
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<tbody>
<tr>
<td>Accurately gather, organize, and analyze patient specific information SICU patients prior to SICU rounds</td>
<td>R2.2, R2.4, R2.6, R2.7, R2.10</td>
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<tr>
<td>Actively participate in SICU rounds</td>
<td>R2.1, R2.2, R2.4, R2.6, R2.7, R2.8, R2.9, R2.10, R5.1</td>
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<tr>
<td>Task</td>
<td>Code</td>
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<tr>
<td>Initiate medication therapy changes or monitoring plans as per protocol or verbal orders</td>
<td>R 2.2, R2.9</td>
</tr>
<tr>
<td>Provide pharmacokinetic services for patients receiving drugs requiring monitoring including, but not limited to, aminoglycosides and vancomycin</td>
<td>R2.2, R2.4, R2.6, R2.7, R2.8, R2.9, R2.10, R2.12</td>
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<tr>
<td>Ensure continuity of pharmaceutical care as patients are admitted to the SICU and are transferred to different levels of care throughout the hospital or when there is a change in the covering pharmacist</td>
<td>R2.2, R2.8</td>
</tr>
<tr>
<td>Resident is required to communicate pertinent information to the appropriate covering pharmacist upon transfer and for weekend and day-off sign-out. This includes pharmacokinetics patients as well as patients with other significant clinical issues.</td>
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<tr>
<td>Compose accurate, concise progress notes documenting direct patient care activities (medication history, anticoagulation, pharmacokinetics, monitoring of therapy) within time frame to be useful</td>
<td>R2.2, R2.8, R2.12</td>
</tr>
<tr>
<td>Resident is required to write 6 pharmacy notes in Powerchart related to medication history, pharmacokinetics, anticoagulation, or adverse drug reactions. Each note must be co-signed by the preceptor with 24 hours of entry into Powerchart.</td>
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<td>Ensure patients have their medications reconciled.</td>
<td>R2.1, R2.2, R2.4, R2.12</td>
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<td>Specific role: obtain or verify medication histories for patients admitted to the SICU and review the patients’ medication regimen upon transfer.</td>
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<tr>
<td>Present patients to preceptor in the afternoons – employing evidence based medicine knowledge gained via independent reading and learning</td>
<td>R2.4, R2.6, R2.7, R2.8, R2.10</td>
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<td>Complete a minimum of 5 topic discussions with preceptor</td>
<td>R5.1</td>
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<td>Resident should lead some of the discussions. If students or other residents are on the rotation concurrently, then an outline must be prepared for the discussion.</td>
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<td>Document ADRs and interventions in Pharmacy One Source</td>
<td>R2.12</td>
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<tr>
<td>Resident is required to document at least 5 ADRs and 10 interventions during the rotation</td>
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<td>Document medication variances in STARS Event Reporting System</td>
<td>R2.12</td>
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Provide an inservice (including primary literature review) – topic requested by team and/or nursing staff

Resident will present to medical team and/or nursing staff on an ICU pharmcotherapeutic topic (approximately 10-15 minutes in length). Topic should be decided by the middle of the second week and approved by preceptor. PowerPoint presentation or handout should be utilized depending on topic (discuss with preceptor) and should include references. A rough draft of the presentation/handout should be presented to preceptor 3 business days prior to presentation.

Participate in a journal club

May be completed with other residents or students on critical care rotations. Article must be approved by preceptor and forwarded to those participating in a timely manner.

Provide educational inservices to nurses or pharmacists as requested by preceptor

Serve as co-preceptor for pharmacy students when applicable

Balance patient care and other residency responsibilities

Discuss time management strategy with preceptor

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<tr>
<th>Preceptor Interaction</th>
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<tr>
<td>Daily:</td>
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<td>- Multidisciplinary rounds at 8:30am; followed by mid-level rounds</td>
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<td>- Preceptor available for patient presentations, reviewing progress notes, and/or topic discussions in the afternoons (hours depending on schedule)</td>
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Expected progression of resident responsibility on this learning experience:

Day 1: Preceptor to review SICU learning activities and expectations with resident.
Week 1: Resident to work up assigned SICU patients before rounds. Preceptor will attend and participate in rounds (modeling pharmacist’s role on the health care team). Resident to present assigned patients to preceptor in the afternoons.

Week 2: Resident to work up assigned SICU patients before rounds. Preceptor will attend and participate in rounds (coaching resident to take on more responsibilities as the pharmacist on the healthcare team). Resident to present assigned patients to preceptor in the afternoons.

Weeks 3-4: Resident to work up assigned SICU patients before rounds. Preceptor may attend and observe the resident’s participation in rounds. The resident will be expected to take on more responsibilities as the pharmacist on the health care team with a goal of rounding independently at least the last week of rotation. Resident to present patients and plan to preceptor in the afternoons. Preceptor will always be available for questions and will follow patients independently to monitor resident skill development in all aspects of the learning experience (facilitating the resident as the pharmacist on the health care team).
Note: the length of time the preceptor spends in each of the phases of learning will depend BOTH on the resident’s progression in the current rotation and when the rotation occurs in the residency program.

**Evaluation Strategy**

ResiTrak will be used for documentation of formal evaluations. For formative evaluations, residents will perform the activity appropriate to the snapshot with the preceptor. Resident and preceptor will then independently complete the snapshot. After both have signed the evaluation, the resident and preceptor will compare and discuss the evaluations. This discussion will provide feedback both on their performance of the activity and the accuracy of the self-assessment. Formative evaluation will also occur as verbal or written feedback on a daily basis.

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<tr>
<th>What</th>
<th>Who</th>
<th>When</th>
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<tbody>
<tr>
<td>Midpoint Summative Self-Evaluation</td>
<td>Resident</td>
<td>End of week 2</td>
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<tr>
<td>Midpoint Summative Evaluation</td>
<td>Preceptor</td>
<td>End of week 2</td>
</tr>
<tr>
<td>Summative Self-Evaluation</td>
<td>Resident</td>
<td>End of learning experience – deadline: to be signed and submitted the end of the day following rotation completion.</td>
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<tr>
<td>Summative Evaluation</td>
<td>Preceptor</td>
<td>End of learning experience – deadline 7 days post final day of rotation to meet with resident to discuss.</td>
</tr>
<tr>
<td>Preceptor &amp; Learning Experience Evaluation</td>
<td>Resident</td>
<td>End of learning experience – deadline 7 days post final day of rotation.</td>
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