Rotation Description: Neurocritical Care at Emory University Hospital (PGY1)

Preceptor: Bill Asbury, B.S., Pharm.D.
Office: EUH Room EG35
Hours: ~8:00am-6:00pm
Pager: 404.686.5500 pic 14028
Office Phone: 404.712.7491

General Description

Neurocritical Care is a four week learning experience at Emory University Hospital. The neurocritical care team consists of neurointensivists, neurocritical care fellows, critical care nurse practitioners, a critical care pharmacist and neurosurgery/neurology residents. The neurocritical care team works in concert with neurosurgeons, neurologists, neuroradiologists and neurointerventionalists. There are currently 27 neurocritical care beds at EUH, 20 beds in 2D-ICU and 7 beds in 2G-ICU.

Neurocritical care rounds, led by the neurointensivist, usually begin at ~0900-0930 daily and usually conclude at ~1230-1300. The pharmacy resident is required to prepare for and attend rounds Monday through Friday. The resident should allow sufficient time to prepare for rounds. Arriving 1.5-2 hours prior to rounds is recommended, at least initially. The resident’s service responsibility usually concludes at ~1700, unless previously discussed with the preceptor. The preceptor will round with the resident daily with few exceptions. If the preceptor is not on rounds, direct contact information will be provided or another critical care pharmacist will be designated as back up. Brief patient discussions will occur between the resident and preceptor prior to rounds, unless a conflict arises. After week one, these discussions will be resident initiated and will focus on specific pharmacotherapy problems or questions that must be addressed before or during rounds. During the rotation, the resident will lead or participate in 4-6 topic discussions with the preceptor. At least one educational presentation is required during the rotation. When applicable, the resident will assist in education, supervision and evaluation of pharmacy students.

The neurocritical care rotation will provide exposure to various surgical and medical neurological diseases. The pharmacy PGY1 resident is expected to provide comprehensive pharmaceutical care for neurocritical care patients, physicians, surgeons, nurses and other pharmacists as it relates to care in the neuroICU’s or, when necessary, neuroscience step down units (NCCI, 2G-floor and 3G-floor). This includes identifying and resolving medication therapy issues (i.e., optimizing pharmacotherapy), drug information, drug education, prompt order entry and medication acquisition, code participation and pharmacokinetic monitoring. Medication profiles for 5_09
all neurocritical care patients should be reviewed prior to rounds daily. The resident must devise efficient strategies for accomplishing the required activities in a limited time frame. Such strategies may include the use of a data collection form, problem list, to do list, and pharmacokinetic monitoring form. Information should be documented in a legible and organized manner, with patient privacy being a priority at all times. Good communication and interpersonal skills are vital to success on this rotation. Appropriate documentation (e.g., pharmacokinetic notes) must be completed within the electronic medical record in a judicious manner. Timely reporting of adverse drug reactions and significant pharmacotherapy interventions is also required.

**Disease States**

The resident will be expected to gain proficiency in at least 4 of the topics/disease states listed below through literature review, topic discussion, and/or direct patient care experience.

- Subarachnoid Hemorrhage
- Cerebral Vasospasm
- Intracranial Hemorrhage
- Arteriovenous Malformation
- Intracranial hemodynamics
- Ischemic Stroke
- Cerebral Venous Sinus Thrombosis
- Hospital Acquired/Ventilator Associated Pneumonia
- Meningitis/Ventriculitis
- Brain/Spinal Abscess
- Syndrome of Inappropriate Diuretic Hormone (SIADH)
- Cerebral Salt Wasting
- Diabetes Insipidus
- Status Epilepticus
- Myasthenia Gravis
- Guillain-Barre Syndrome
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

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<tr>
<th>Activity</th>
<th>Goal</th>
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<tr>
<td>Accurately gather, organize, and analyze patient specific information for neurocritical care patients prior to pre-rounds with preceptor</td>
<td>R2.2&lt;br&gt;R2.4&lt;br&gt;R2.6&lt;br&gt;R2.10</td>
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<tr>
<td>Meet with preceptor for pre-rounds</td>
<td>R2.2&lt;br&gt;R2.4&lt;br&gt;R2.7&lt;br&gt;R2.10</td>
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<tr>
<td>Actively participate in neurocritical care team rounds</td>
<td>R2.1&lt;br&gt;R2.4&lt;br&gt;R2.6&lt;br&gt;R2.8&lt;br&gt;R2.9&lt;br&gt;R2.10</td>
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<td>Provide a “full” in-service reviewing primary literature review – topic requested by team</td>
<td>R5.1</td>
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<td>Five to ten minutes in length. Topic should be decided by the middle of the second week and approved by</td>
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The handout should be 1 page front and back, prepared in Microsoft Word, and include references. A rough draft of the handout should be presented to preceptor 3 weekdays prior to presentation.

Complete a minimum of 4 topic discussions as related to topics/disease states noted above. Resident should lead some of the discussions. An outline must be prepared for the discussion.

Provide pharmacokinetic dosing and monitoring for neurocritical care patients receiving drugs requiring monitoring- including, but not limited to, aminoglycosides, vancomycin, phenytoin, fosphenytoin, valproic acid and phenobarbital.

Initiate monitoring plans or medication therapy changes as per protocol or verbal orders

Document ADRs and interventions in Pharmacy One Source

Document medication variances in STARS Event Reporting System

Present patients to preceptor in the afternoons – employing evidence based medicine knowledge gained via independent reading and learning

Provide educational in-services 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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Daily:  
- Preceptor available from 0800 to 0900 (time may vary based on team rounding schedule) for pre-rounds with resident  
- Team rounds usually begin 9am-930am, but can vary depending upon the attending on service  
- Preceptor available for patient presentations, reviewing progress notes, and/or topic discussions in the afternoons ~1400 to 1600.

Expected progression of resident responsibility on this learning experience:

Day 1 @ 0700: Preceptor to review neurocritical care learning activities and expectations with resident.

Week 1: Resident to work up selected patients and present to preceptor prior to team rounds. Preceptor will attend and participate in team rounds (modeling pharmacist’s role on the health care team).

Week 2: Resident to work up selected patients and present patients to preceptor prior to team rounds. Preceptor will attend and participate in team rounds (coaching the resident to take on more responsibilities as the pharmacist on the health care team).

Week 3-4: Resident to work up neurocritical care patients and present select patients to preceptor prior to team rounds. Preceptor will attend and observe the resident’s participation on rounds, and/or may expect a summary report from the resident regarding rounding activities and use of recommendations made by the resident. 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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<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>
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<tr>
<td>Summative Self-Evaluation</td>
<td>Resident</td>
<td>End of learning experience – deadline to be signed and submitted by 1300 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>
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<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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