Anticoagulation Learning Experience

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General Description

Anticoagulation is a mandatory four week learning experience at EUH and/or EUHM for PGY-1 pharmacy residents. The purpose of this learning experience is to develop the resident’s anticoagulation knowledge and skills needed in an academic and/or community hospital environment. The focus of the Anticoagulation Service is to provide for the safe and effective use of anticoagulation therapies throughout the hospital.

During this learning experience, the pharmacy resident will be responsible for (including but not limited to) maintaining the warfarin master list, daily monitoring of each of the patients on the warfarin master list, monitor patients receiving parenteral anticoagulants to include heparin, low molecular weight heparin, fondaparinux, and direct thrombin inhibitors. The resident will identify and resolve pharmacotherapeutic issues, as well promote protocol adherence to ensure safe use of these high risk drug therapies. In addition, the resident will provide the following anticoagulation services (including but not limited to): monitoring and dose adjustment of anticoagulation therapies per pharmacotherapy consult, provide drug information related to anticoagulation therapies, and perform medication counseling. The resident will document therapeutic drug monitoring, interventions, and patient education. The resident will devise an efficient strategy for accomplishing daily activities in order to provide anticoagulation services for the hospital. Lastly, the resident will provide education to other health care providers or pharmacists as the need arises.
**Disease States**

The resident will be expected to gain proficiency through literature review, topic discussion, and direct patient care experiences. Specific topics to be discussed during the rotation will be (including but not limited to):

- Physiology of coagulation
- Parenteral anticoagulants
- Pharmacology and management of warfarin therapy
- Pharmacology of antiplatelet drugs
- Prevention of venous thromboembolism
- Treatment of venous thromboembolism
- Heparin induced thrombocytopenia
- Antithrombotic therapy in pregnancy
- Basics of heritable and acquired thrombophilic disorders, as well as pharmacogenomics associated with the use or warfarin therapy

**Goals Selected:**

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

**Goal R1.4:** Demonstrate ownership of and responsibility for the welfare of the patient by performing all necessary aspects of the medication-use system.

- Accurately gather, organize, and analyze patient specific information
- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Initiate monitoring plans or medication therapy changes per protocol
- Present patients to preceptor employing evidence based medicine knowledge gained from topic discussions and independent learning

**Goal R2.4:** Collect and analyze patient information

- Accurately gather, organize, and analyze patient specific information
- Meet with preceptor as scheduled
- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Present patients to preceptor employing evidence based medicine knowledge gained from topic discussions and independent learning

**Goal R2.6:** Design evidence-based therapeutic regimens

- Accurately gather, organize, and analyze patient specific information on patients
- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Present patients to preceptor employing evidence based medicine knowledge gained from topic discussions and independent learning

**Goal R2.7:** Design evidence-based monitoring plans.

- Meet with preceptor as scheduled
- Compose accurate, concise progress notes documenting direct patient care activities (medication history, ADR, drug-drug interaction, monitoring of therapy) within an useful time frame
- Present patients to preceptor employing evidence based medicine knowledge gained from topic discussions and independent learning

**Goal R2.8:** Recommend or communicate regimens and monitoring plans

- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Compose accurate, concise progress notes documenting direct patient care activities (medication history, ADR, drug-drug interaction, monitoring of therapy) within an useful time frame
- Provide and document education to patients and/or caregivers

**Goal R2.9:** Implement regimens and monitoring plans.

- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Provide and document education to patients and/or caregivers
- Initiate monitoring plans or medication therapy changes per protocol

**Goal R2.10:** Evaluate patients’ progress and redesign regimens and monitoring plans

- Accurately gather, organize, and analyze patient specific information on patients Meet with preceptor for am meeting
- Actively participate in pharmaceutical care plan for continuity of anticoagulation
- Present patients to preceptor employing evidence based medicine knowledge gained from topic discussions and independent learning

**Goal R2.12:** Document direct patient care activities appropriately

- Compose accurate, concise progress notes documenting direct patient care activities (medication history, ADR, drug-drug interaction, monitoring of therapy) within an useful time frame
- Document ADRs and interventions in Pharmacy One Source
- Document medication variances in STARS Event Reporting System

**Goal R5.1** Provide effective medication and practice-related education, training, or counseling to patients, caregivers, health care professionals, and the public
- Provide an inservice (i.e. patient case, informative talk, review of a pertinent piece of primary literature) on each campus related to anticoagulation to other healthcare providers. Each presentation should be decided during the first week and approved by preceptor.
- Provide and document education to patients and/or caregivers.
- Complete the required topic discussions as outlined in the anticoagulation learning description and apply knowledge gained to patients encountered on the rotation. 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.
- Serve as co-preceptor for pharmacy students when applicable.

### 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 on patients</td>
<td>R1.4</td>
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<tr>
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<td>R2.4</td>
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<td>R2.6</td>
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<td>R2.10</td>
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<tr>
<td><strong>Meet with preceptor as scheduled</strong></td>
<td>R2.4</td>
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<tr>
<td><strong>Actively participate in pharmaceutical care plan for continuity of anticoagulation</strong></td>
<td>R1.4</td>
</tr>
<tr>
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<td>R2.12</td>
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<td>R2.7</td>
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<td>Responsibility</td>
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<td>R2.8, R5.1</td>
</tr>
<tr>
<td>Provide and document education to patients and/or caregivers</td>
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<td>Present patients to preceptor employing evidence based medicine knowledge gained from topic discussion and independent learning</td>
<td>R1.4, R2.4, R2.6, R2.7, R2.10</td>
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<tr>
<td>Provide educational in-services to nurses or pharmacists as requested by preceptor.</td>
<td>R5.1</td>
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<td>Serve as co-preceptor for pharmacy students when applicable</td>
<td>R5.1</td>
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**Preceptor Interaction**

Daily:  
- Preceptor available to resident from 0830 to 0930 for AM meeting  
- Preceptor available for patient presentations, reviewing progress notes, and/or topic discussions in the afternoons 1400 to 1600  
- Preceptor will always be availability to assist in direct patient care decisions

**Expected progression of resident responsibility on this learning experience:**

Day 1 @ 0830: Preceptor to review learning activities and expectations with resident.

Week 1:  
Resident to work up patients and present to preceptor. Preceptor may actively participate in patient care (modeling anticoagulation pharmacist’s role).

Week 2:  
Resident to work up patients and present select patients to preceptor. Preceptor may actively participate (coaching the resident to take on more responsibilities as the anticoagulation pharmacist).

Week 3-4:  
Resident to work up patients and present select patients to preceptor. Preceptor may observe the resident’s participation, and/or may expect a summary report from the resident 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 anticoagulation pharmacist).

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. The anticoagulation learning experience is shared between EUH and EUHM. Therefore, a formative (verbal or written) evaluation will be performed at the end of the first week by the first preceptor, and at the end of the third week by the second preceptor. These evaluations will serve as midpoint evaluations on the individual campuses. At the end of weeks two and four, a summative evaluation will be completed in ResiTrak by the preceptor. These evaluations will serve as a midpoint and summative evaluations for the learning experience, respectively. Formative evaluation will also occur on a daily basis as verbal feedback.

<table>
<thead>
<tr>
<th>What</th>
<th>Who</th>
<th>When</th>
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<tbody>
<tr>
<td>Formative Self-Evaluation</td>
<td>Resident</td>
<td>End of week 1</td>
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<tr>
<td>Formative</td>
<td>Preceptor</td>
<td>End of week 1</td>
</tr>
<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>Formative Self-Evaluation</td>
<td>Resident</td>
<td>End of week 3</td>
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<tr>
<td>Formative</td>
<td>Preceptor</td>
<td>End of week 3</td>
</tr>
<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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<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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