

## **ROTATION DESCRIPTION**

### **ROTATION TITLE**

Cardiothoracic Surgery (PGY2)

### **PURPOSE**

The purpose of this rotation is to allow the resident to become an expert in all aspects of critical care medicine especially as it relates the care of the cardiothoracic surgery and cardiac transplant patients. To that end, the resident will develop and refine advanced pharmacotherapeutic skills in the identification and resolution of drug therapy problems in this critically ill patient population. In doing so, the resident must assume complete responsibility for patient care and assure positive drug therapy outcomes.

### **LEARNING EXPERIENCE DESCRIPTION**

The Cardiothoracic Surgery rotation should serve to enhance the resident's experiences in becoming proficient in wide variety of therapeutic issues and demands in treating the critically ill patient.

The typical day begins with rounds with the cardiothoracic surgery team which commence promptly at 5:30 am, and last roughly 1.5 hours. The service consists typically of about 6-10 patients in the CTICU and a census of around 10-15 floor patients at any time. The patient problem lists and work up of new admissions, along with literature retrieval/evaluation occurs commonly between 7 am – 9 to 10 am daily. Then the resident meets with the preceptor for bedside rounds discussing all patient issues which continues until all patient care issues have been addressed. Topic discussions are also done at this time using the patient setting as the classroom. The afternoon is reserved for further work-up of afternoon operative case admissions, addressing any outstanding or new patient care issues or reading/ research into topics pertinent to direct patient care (**Appendix A**). Evening rounds with the cardiothoracic surgery team usually commence between 2-5 pm where all final issues and plans are addressed for the evening. The resident should provide prompt feedback to the preceptor of topics not being properly explained to them, and areas of improvement for the preceptor/team.

### **LEARNING EXPERIENCE ACTIVITIES**

- Devise efficient strategies for one's own direct patient-care activities, which incorporate appropriate interpretation of primary literature and patient data that maximizes the delivery of appropriate pharmaceutical care to the critically ill patients. (CC: R2.4.1; R2.4.2; R2.4.3; R2.5.1; R2.5.2; IM: R2.4.2; R2.4.3; TX: R2.5.1; R2.5.2; R2.5.3; R2.7.1; R2.8.1; PCT: R.1.1.1, R2.4.1; R2.4.2; R2.4.3; R2.6.1; R2.6.2; R2.7.1)
- Generate patient-specific databases that meet the pharmacist's needs for making drug therapy recommendations. (CC: R2.7.1; IM: R2.8.1; TX: 2.8.1; PCT: R1.1.1, R2.7.1; R2.8.1)

- Appraise patient's drug therapy to determine the appropriateness of drug, dose, dosage regimen, route/method of administration, regimen, compliance, therapeutic duplications, therapeutic outcomes, cost and the avoidance of adverse drug reactions and negative interactions.

(CC: R2.4.1; R2.4.2; R2.4.3; IM: R2.4.2; R2.4.3; TX: R2.5.1; R2.5.2; R2.5.3; PCT: R2.4.1; R2.4.2; R2.4.3)

- Specify pharmacotherapeutic goals for patients that consider patient-, age-, disease- and drug-specific information and ethical considerations for various disease states.

(CC: R2.5.1; R2.8.1; R2.8.2; R2.9.1; IM: R2.8.1; TX: R2.7.1; R2.7.2; R2.8.1; PCT: R2.8.1; R2.10.1)

- Design therapeutic regimens to achieve the pharmacotherapeutic goals of specific patients.

(CC: R2.5.2; R2.7.1; R2.8.1; R2.9.2; R2.9.3; TX: R2.8.1; PCT: R2.7.1; R2.8.1; R2.10.1; IM: R4.3.2)

- Effectively recommend a pharmacotherapeutic regimen to prescribers and patients in a way that is systematic, logical and secures consensus from the medical team.

(CC: R2.1.1; R2.7.1; TX: R2.10.1; R2.10.2; PCT: R1.3.1, R1.3.2, R2.1.1; R2.8.1 IM: R2.6.1, R2.6.2, R2.7.1, R2.10.2, R4.3.2)

- Design monitoring plans that effectively measure the achievement of pharmacotherapeutic goals and take into account patient-specific factors.

(CC: R2.7.1; R2.8.1; TX: R2.8.1; R2.10.1; R2.10.2; R2.11.1; R2.11.2; PCT: R1.3.2, 2.8.1; R2.10.1, R2.11.2, R2.12.2; IM: R2.6.1, R2.6.2, R2.7.1, R2.10.2, R4.3.2)

- Ensure continuity of pharmaceutical care to and from the acute setting.

(CC: R2.10.1; TX: R2.12.1; R2.12.2; PCT: R2.12.1, R2.12.2; IM: R2.10.2)

- Evaluate the use and benefit of chronic medications.

(CC: R2.4.1; R2.4.2; R2.4.3; TX: R2.5.2; R2.5.3; PCT: R2.4.1; R2.4.2; R2.4.3; IM: R2.4.2; R2.7.1)

Documentation of clinical activities performed by the resident (minimum of 25/week) and 2 ADR's reported for the month in Horizon Meds Manager<sup>®</sup> (HMM).

(CC: R2.11.1; TX: R2.13.1; R2.13.2; PCT: R2.13.2; R3.2.6; IM: R2.6.2, R4.3.2)

- Assure compliance to institutional policies and procedures for drug use evaluation guidelines and restricted drugs.

(CC: R2.9.1; E1.3.1; E1.3.2; R3.2.6; TX: R3.1.1; PCT: R2.10.1; IM: R4.3.2, R6.1.3)

- Assess, manage and report negative drug interactions.

(CC: R2.4.3; R2.9.1; TX: TX: R2.5.1; R2.10.1; R2.10.2; PCT: R2.4.2; R3.2.6; IM: R2.4.2; R2.10.2, R4.3.2)

- Participate in medical emergencies.  
(IM: E3.1.1)
- Provide concise, applicable, and timely responses to requests for drug information from your preceptor, team members, nursing staff and other health care workers when required.  
(CC: R2.1.1; R3.1.1; R3.1.5; E2.1.1; TX: R1.3.1; R1.3.2; R1.3.3; R1.3.4; R1.3.5; R1.3.6; R1.3.7; R1.3.8; PCT: R1.1.4, R3.1.2, R3.1.3, R4.1.1, R3.1.9, R3.1.11; IM: R1.5.9, R2.10.2, R3.1.3, R6.1.3)
- Provide in-service education to physicians, nurses and other clinical practitioners.  
(CC: R3.1.1; R3.1.4; R3.1.5; E5.2.1; ONC: R1.2, R4.1; TX: R1.3.1; R1.3.2; R1.3.3; R1.3.4; R1.3.5; R1.3.6; R1.3.7; R1.3.8; PCT: R3.1.3, R1.1.4; IM: R2.10.2, R3.1.3)
- Develop effective time management strategies.  
(CC: R2.2.1; R2.4.4; TX: R2.3.1; PCT: R1.1.1, E7.4.1)

## **REQUIREMENTS OF LEARNING EXPERIENCE**

### **Required hours**

5:30 AM to 6:00 PM

As patient care requires, the above listed times may vary.

### **Required meetings**

Daily meetings with preceptor in am and pm

CT Surgery M&M conference – Wednesday's – 5 PM

Residents are also required to attend selected conferences and seminars essential for fulfilling the residency requirements

### **Required readings**

Readings for this rotation are provided in a rotation reading book and is continuously updated.

## **ROTATION PRECEPTOR**

Walter E, Uber, PharmD

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## **METHOD OF EVALUATION**

Evaluation of residents will be based on the learning experience objectives outlined by the Residency Program Director (RPD). The RPD will identify the specific goals and objectives on which the resident will be evaluated (available in E-Value). The preceptor and resident will review the resident's customized plan and the learning experience

introduction document on the first day of rotation. Feedback will include, but not be limited to, verbal and written mid-point and end of rotation evaluations.

## **Appendix A**

### **Objectives to be addressed on this rotation include the following:**

1. Have a general understanding of heart disease states that may be amenable to palliation or correction with cardiac surgery:
  - coronary artery disease, MI
  - valvular heart disease
  - arrhythmias
  
2. Have a general understanding of general cardiac surgery procedures, complications, management and outcomes:
  - coronary artery bypass grafting (CABG)
  - valvular surgery
  - automatic implantable cardioverter defibrillator (AICD)
  - pacemakers
  - bleeding, infection stroke, MI
  - antibiotics, nutrition, hemodynamic monitoring and management
  
3. Have a general understanding of disease states that may be amenable to palliation or correction with thoracic surgery:
  - lung cancer
  - thoracic trauma
  - esophageal cancer
  - empyema
  - aortic dissection
  - malignant pleural effusions
  - esophageal rupture
  - spontaneous pneumothorax
  
4. Have a general understanding of general thoracic surgery procedures, complications, management and outcomes:
  - decortication, pleurectomy, pleurodesis, thoroscopy, wedge resection, lobectomy, pneumonectomy, esophagectomy
  - bleeding, infection, malnutrition, pneumothorax
  - antibiotics, nutrition, chest tube management, hemodynamic monitoring, ventilator management
  
5. Have a general understanding of indications for heart transplantation:

- end stage idiopathic cardiomyopathy, ischemic cardiomyopathy, refractory arrhythmias none of which can be treated with other medical or surgical interventions, etc.
6. Have a general understanding of the surgical procedures, complications, management and outcomes associated with heart transplantation:
- heart transplant
  - infection, rejection, medication adverse effects
  - immunosuppression, prophylactic and treatment antibiotics, nutrition, HTN, etc.
  - general overall survivability for each patient group
7. Have an in depth understanding of general principles involved with the management of a critically ill patient:
- ventilator management
  - hemodynamic monitoring
  - management of use of inotropic, vasodilators and vasoconstrictor medications
  - fluid, electrolyte and acid base status
  - issues surrounding the prophylaxis and treatment of infections and general antibiotic management
  - prophylaxis and treatment of other potential ICU problems (i.e. DVT/PE, stress ulcer/GI bleeding, etc.)
  - nutritional management
  - pain, sedation and paralytic management
  - use of blood products and other colloids
  - management and drug dosing in patients with various degrees of multi-system organ failure