



## ANST 709D Cardiovascular Critical Care Rotation Information

### Course Director

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### Course Introduction:

The Cardiovascular ICU rotation is an opportunity for students to develop proficiency in recognition and management of patients with the set of medical problems that require Critical Care. On completion of the rotation, the student will have participated in Critical Care Medicine didactics, demonstrated adequate decision making in patient care, and shown a caring and compassionate attitude for critically ill patients. The student will display the skills of patient evaluation, communication, teamwork and participate in clinical decision making.

The Cardiovascular ICU offers the student the opportunity to work in a closed ICU with a multidisciplinary care team. During the rotation, the student will have the opportunity to practice clinical decision making skills and procedural skills within the cardiovascular arena. The student will be assigned to one of the two day teams, spending time on both teams over the course of the rotation. The **D1** team takes surgical and cardiology patients, while the **D2** takes surgical and advanced Heart Failure patients). You can find your team and patient assignments on the wipe-off board. The student will be expected to admit and follow patients, present patients to team members, and to give two 5-10 minute presentations on a relevant critical care topic. The student is expected to be prepared to start team ICU rounds at 0800, and to participate in patient care until dismissed by the attending or fellow after afternoon sign out. The student is also expected to come in to round, including both week and weekend days, following the below schedule. If, due to SoM holidays or personal/professional conflicts, the student needs to alter their schedule pattern, they are welcome to work this out directly with their attending/team. The attending/fellow/resident schedule can be found at <https://ohsu.ezcall.com/users/login>. The username is cvicu, the password is cvicu1.

### Schedule:

**Week 1 of the rotation**  
Monday through Friday

**Week 2 of the rotation**  
Monday through Friday

**Week 3 of the rotation**  
Monday through Friday

### Resources:

Other important information for you to review prior to your rotation can be found at the following links:

- [CVICU Handbook](#)
- [CVICU Bridge Site](#)
- [APOM Policy Site](#)
- [APOM Critical Care Medicine Site](#)

### Student Expectations:

Attendance:

1. Participate daily in activities as directed by the faculty, fellow, or resident, including AM & PM rounds.
2. Round on all assigned patients prior to morning rounds.
3. Participate in any afternoon didactics that occur, with the ICU team.

Professionalism:

1. Have pager on and functioning each day.
2. Complete your MedHub "Student Identified Supervisor" prompt each week, in order to generate evaluations to the faculty members/residents with whom you work.
3. If planned absences during the rotation are necessary, email Dr. Baskerville and Emi Garcia as soon as possible with your Request for Time Off From Clinical Experience form.

**CVICU Attending Intensivists:**

- Mark Baskerville
- Miko Enomoto
- Ryan Fink
- Brian Jones
- Marshall Lee
- Matthias Merkel
- Bart Moulton
- Dane Nichols
- Jonathan Pak
- Peter Schulman
- Daniel Sedehi
- Michael Wollenberg

**Daily Schedule:**

Monday	Tuesday	Wednesday	Thursday	Friday
6:00 Sign Out/ Pre-rounding	6:00 Sign Out/ Pre-rounding	6:00 Sign Out/ Pre-rounding	6:00 Sign Out/ Pre-rounding	6:00 Sign Out/ Pre-rounding
7:00-7:15 Daily Management Board	7:00-7:15 DMS / Pre- rounding	7:00-7:15 DMS / Pre- rounding	7:00-7:15 DMS / Pre- rounding	7:00-7:15 DMS / Pre- rounding
8:00 Radiology Rounds		8:00 Radiology Rounds		8:00 Radiology Rounds
8:30 Team Rounds	8:30 Team Rounds	8:30 Team Rounds	8:30 Team Rounds	8:30 Team Rounds
13:00 Team Education	13:00 Team Education 15:00 MDCC Lecture KPV 14000D	12:00 CCM Lecture SJH 4248	13:00 Team Education 14:00 ICU M&M	13:00 Team Education
16:00 Attending Sign Out	16:00 Attending Sign Out	16:00 Attending Sign Out	16:00 Attending Sign Out	16:00 Attending Sign Out
18:00 Team Sign Out	18:00 Team Sign Out	18:00 Team Sign Out	18:00 Team Sign Out	18:00 Team Sign Out

**AM Rounds**

- Prior to morning rounds it is expected that the student will round on all assigned patients.
- The team will meet in the unit work room (OR in the Thoracic reading room in Radiology on Mondays, Wednesdays and Fridays) & review X-rays. The Fellow or Attendings will direct rounds.
- The student is responsible to coordinate unit activities for the day with the ICU team.
- The student is responsible to communicate changes in patient status with the ICU Fellow and Attending.
- The student should participate in any afternoon didactics that occur with the ICU team.

**PM Rounds:**

- Summary of salient historic and care related events, daily goals and results, plan for the next 12-18 hrs in order to transfer care to the night team.

**Mistreatment Reporting:**

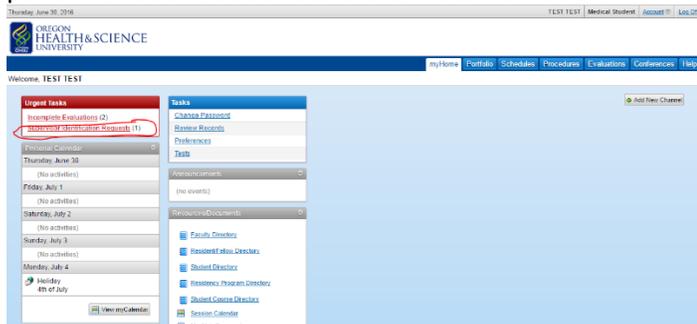
Students are encourage to report incidences of mistreatment by Faculty, Residents, Interns, Fellows, Nurses, other healthcare and non-healthcare personnel, students, patients, or others. All reports will remain confidential and separate from your course evaluations. Link to form for mistreatment reporting: <http://bit.ly/Mistreatment>

To report a complaint of prohibited discrimination and/or harassment (age, disability, Family Medical Leave Act and/or Oregon family Leave Act, gender, marital status, military/reserve status, national origin, pregnancy, race/color, religion, retaliation, sexual harassment, sexual orientation, veteran's status, whistle blower, worker's compensation system, and other), please contact the AAEO (<http://www.ohsu.edu/xd/about/services/title-ix/index.cfm>). To file a report with AAEO, go to <http://www.ohsu.edu/xd/about/services/title-ix/reporting/submit-report.cfm>.

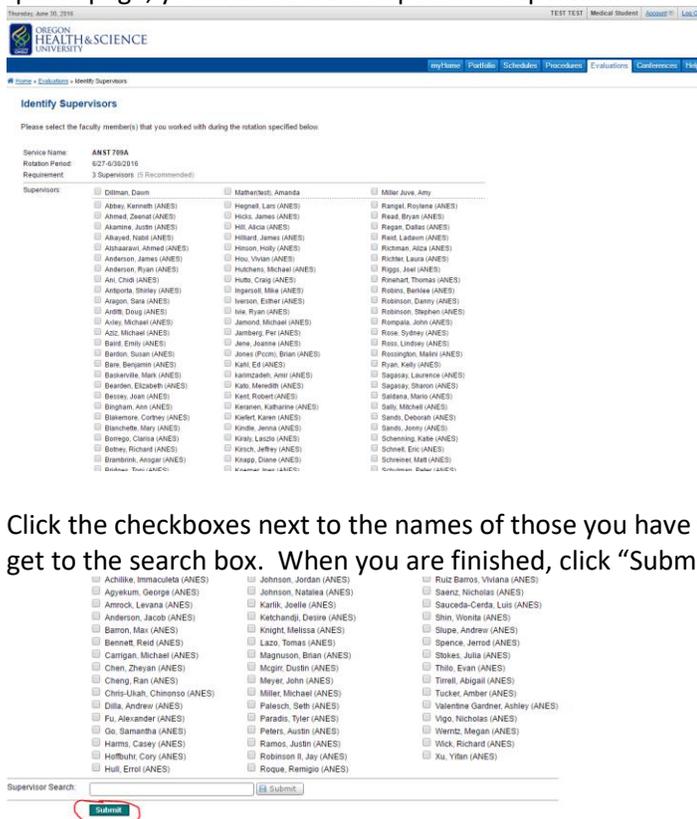
## Clinical Evaluations:

### Student must identify faculty & residents with whom they work during the rotation

Each week during the rotation, you will receive a prompt in MedHub to identify which faculty and residents you have worked with. It is crucial that you complete these “SIS” requests in a timely fashion, in order to generate your clinical performance evaluations to the correct individuals. This will show up on your MedHub home page “Urgent Tasks”:



Follow the circled link to Supervisor Identification Requests (also known as Student-Identified Supervisors or SIS). This will bring up your queue, showing any completed or outstanding SIS requests. Once a SIS request is opened from the queue page, you will see a list of possible supervisors to select:



Click the checkboxes next to the names of those you have worked with, or scroll to the bottom of the supervisor list to get to the search box. When you are finished, click “Submit” and you will be returned to your Evaluations queue.

If you have any questions or cannot find the name of someone you have worked with/would like to generate an evaluation to, please contact Emi Garcia ([garciaem@ohsu.edu](mailto:garciaem@ohsu.edu)).

Please note that the evaluation process for visiting students is handled differently. Visiting students will be sent supplementary instructions at the start of the rotation.

## **ANST 709D Curriculum:**

### **Goals:**

#### **Medical Knowledge:**

1. Understand the pathophysiology of the common conditions affecting ICU patients that might lead to or contribute to ICU admission.
2. Understand the signs and symptoms and the initial treatment for life threatening conditions.
3. Understand the general pharmacology and proper use of medications commonly used in the ICU.
4. Understand hemodynamic monitoring and special equipment used in the ICU and how it is used to facilitate patient care.
5. Understand the use of non-invasive and invasive ventilation techniques, including initiation, maintenance and liberation from mechanical ventilation.
6. Understand the goals of sedation and analgesia in the ICU and the different sedation and analgesia options.
7. Understand the goal of basic nutrition support principles and the process for formulating and preparing a nutritional care plan.
8. Understand the infectious disease issues associated with the critically ill, including the treatment strategies for ventilator associated pneumonia, urinary tract, soft tissues, CVL and intra-abdominal infections.
9. Understand basic infection control risks and strategies. Understand the techniques that may be used to prevent central venous line and postoperative wound infections.
10. Understand systematic approach to the use of diagnostic testing and consultant activities in the ICU

#### **Patient Care:**

1. Understand the signs and symptoms and the initial steps a physician needs to take to treat life- and limb-threatening conditions in the critically ill.
2. Understand the signs and symptoms and the initial treatment for common ICU medical conditions to include but not limited to:
  - a. Cardiac Insufficiency - Arrest
  - b. Respiratory Insufficiency – Arrest
  - c. Acute Lung Injury (ALI)
  - d. Acute Respiratory Distress Syndrome (ARDS)
  - e. Shock, all types
  - f. Sepsis
  - g. Pneumo-, hemato- and hydrothorax
  - h. Pulmonary Emboli
  - i. Cardiac Tamponade
  - j. Acute Myocardial infarction / Ischemia
  - k. Intra Abdominal/Pelvic catastrophe
  - l. Multi Organ System Failure
  - m. Acute/Chronic Liver Failure
  - n. Acute/Chronic Renal failure
  - o. Endocrine emergencies
  - p. Hematological Emergencies
  - q. Compartment Syndrome

- r. Rhabdomyolysis
  - s. Vascular Emergencies
3. Understand the basic concepts of therapeutic decision-making.
  4. Understand the various admission requirements for patients requiring treatment in an ICU and how they differ from patients requiring care in other settings.
  5. Understand the criteria and various barriers to ICU patient discharge.
  6. Understand airway management, standard ventilator management techniques, and management of complications.
    - a. open airways on non-intubated patients
    - b. ventilation by bag-mask systems
    - c. tracheal intubations
    - d. contemporary modes of mechanical ventilation
  7. Understand the following ICU associated procedures, the indications, techniques and the management of complications.
    - a. arterial puncture and cannulation
    - b. insertion of central venous catheters
    - c. pulmonary artery catheters

**Practice based learning:**

1. Understand the need for patient safety goals especially in the areas of monitoring, medication safety and error reduction strategies.
2. Understand the concepts of therapeutic decision-making and the concept of patient centered care.
3. Understand the basic methods for searching, reviewing and evaluating the medical and scientific literature.
4. Recognize adverse outcomes in your patients.

**Interpersonal and Communication Skills and Professionalism:**

1. Understand the goals of and importance of teamwork in the Critical Care setting.
2. Understand the importance of proper communication as it related to patient care, unit development and the concept of closed loop communication.
3. Understand the concept of active listening as it pertains to patient exams, interaction with families and fellow hospital staff.
4. Understand the common ethical and social issues as well as patient factors in making patient care decision making

**Systems based Practice:**

1. Understand the basic concepts of and issues contributing to ICU costs and the impact on patients and Hospital costs.
2. Participate in weekly Morbidity and Mortality Conference and understand the importance of Quality Improvement Initiatives.

## **Objectives:**

### **Medical Knowledge:**

1. Describe the patho-physiology of common disease processes that might lead to ICU admission and the effects on the Cardiovascular, Pulmonary, Hematological, Neurological, Endocrine as well as Renal and Gastrointestinal systems.
2. Discuss the immediate management of the post-operative cardiac, thoracic, standard surgical patients.
3. Discuss the common medical problems and concerns associated with the surgical patient; neuro-cognitive, cardiovascular, pulmonary, endocrine, & renal.
4. Discuss the immediate and delayed concerns of the post-surgical cardiothoracic patient.
5. Discuss medical and interventional therapies for Acute Coronary Syndrome, anticipated complications of the disease and risk stratification.
6. Discuss medical and interventional therapies for Cardiogenic Shock, Distributive Shock and Hemorrhagic Shock.
7. Explain the goals of sedation and analgesia in the ICU. Discuss the various options available to facilitate sedation and analgesia, including sedation scales and various types of sedation medications.
8. Describe contemporary modes of ventilation and weaning strategies.
9. Explain the goal of basic nutrition support. Discuss the initial nutrition assessment of a critically ill patient. Identify risk factors associated with poor nutritional health and prepare a nutritional plan, to include formula selection and caloric needs for critically ill patients.
10. Discuss basic infection control goal and the techniques used to help in the prevention of ventilator associated pneumonia (VAP), urinary tract infections (UTI), central venous line (CVL) and post operative wound infections.
11. Discuss basic patient care protocols and techniques used to help in the prevention of ventilator associated pneumonia (VAP), deep venous thrombosis (DVT), peptic ulcer disease (PUD), central venous line (CVL) and post operative wound infections.
12. Describe treatment strategies for VAP, UTI, CVL, DVT, PUD, soft tissues and intra-abdominal infections.
13. Present an organized approach to clinical problem solving including a differential diagnosis, well as systematic approach to the use of diagnostic testing and consultant activities.
14. Participation in daily unit based didactics.

### **Patient Care:**

1. Differentiate between patients requiring treatment in an ICU and other care settings.
2. Identify ICU patients who are ready for ward transfer and the factors important to facilitate safe patient care transfer.
3. Describe the diagnostic criteria and Demonstrate proficiency in the initiation of treatment plans for patients with impending organ failure (respiratory, cardiac, neurological, hepatic, renal & gastrointestinal)
4. Identify treatment for the following conditions:
  - a. Cardiac Insufficiency - Arrest

- b. Respiratory Insufficiency – Arrest
  - c. Acute Lung Injury (ALI)
  - d. Acute Respiratory Distress Syndrome (ARDS)
  - e. Shock, all types
  - f. Sepsis
  - g. Pneumo-, hemato- and hydrothorax
  - h. Pulmonary Emboli
  - i. Cardiac Tamponade
  - j. Acute Myocardial infarction / Ischemia
  - k. Intra Abdominal/Pelvic catastrophe
  - l. Multi Organ System Failure
  - m. Acute/Chronic Liver Failure
  - n. Acute/Chronic Renal failure
  - o. Endocrine emergencies
  - p. Hemotological Emergencies
  - q. Compartment Syndrome
  - r. Rhabdomyolysis
  - s. Vascular Emergencies
5. Use data from appropriate invasive and non-invasive monitoring devices to diagnose and treat patients
  6. Explain the indications for emergency airway management and ventilator management. Please discuss the following techniques:
    - a. open airways on non-intubated patients
    - b. ventilation by bag-mask systems
    - c. tracheal intubations
    - d. contemporary modes of ventilation
  7. Explain the indications, contraindications, & complications of the following ICU associated procedures.
    - a. arterial puncture and cannulation
    - b. insertion of central venous catheters
    - c. pulmonary artery catheters

**Practice based learning:**

1. Recognize existing and describe additional patient safety monitoring and error reduction strategies that could be employed in the ICU.
2. Recognize and describe basic methods for searching, reviewing and evaluating the medical and scientific literature
3. Identify appropriate resources and protocols as applicable to the care of the critically ill patient

**Interpersonal and Communication Skills and Professionalism:**

1. Demonstrate effective communication with physicians, nurses, consultants and all other members of the healthcare team on rounds and in daily interactions as observed by attending staff or reported to staff.
2. Communicates clearly, correctly, and concisely in a written report, stressing the important issues and an articulate plan.
3. Communicates clearly, correctly, and concisely in a verbal report, stressing the important issues and an articulate plan.
4. Describe safe order entry and the concept of closed loop communication as it relates to verbal orders.
5. Display support & empathy to patients and their families, as witnessed by attending staff or reported to staff.
6. Display good relationships with other healthcare providers
7. Respect, recognize and use the particular skill sets of other CC practitioners, such as CC nurses, RT, PT, OT, dieticians, pharmacists.

8. Considers ethical issues and patient wishes in treatment decisions
9. Deliver two presentations to the team on a recent journal article or relevant topic. The presentation is to be 5 to 10 minutes in length and may be presented at the end of rounds or after one of the case based learning opportunities.

**Systems based Practice:**

1. Discuss the issues of patient safety including the medical systems that put patients at risk, medication, operations, transfusions & nursing ratios.
2. Describe the critical components of a procedural pause.

**Student References:**

1. Arterial Line placement video: <http://content.nejm.org/cgi/video/354/15/e13/>
2. CVP placement video: <http://content.nejm.org/cgi/content/full/348/12/1123/DC1>