ANES 860: General Anesthesiology

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Does this rotation accept visiting students? ☒ YES ☐ NO

COURSE DESCRIPTION:
The course is an introduction to general anesthesia management, emphasizing the anesthetic subspecialties of pediatric, neurosurgical, cardiothoracic, obstetrical anesthesia, and pain management. The student will acquire a working knowledge of commonly used anesthetic agents, techniques and airway management. Students are expected to behave as senior students, helping with set-up and prepared for all cases with a plan. Only students seeking a residency in Anesthesia will be approved to schedule a rotation prior to January.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Discuss cardiovascular and pulmonary physiology as applied in a variety of clinical settings and disease processes and discuss clinically applicable pharmacokinetics and pharmacodynamics across various pharmacologic therapies. (MK5, PC1, PC2)
2. Start an intravenous line and have been guided through the process of intubations, place LMAs (laryngeal mask airways), start an arterial line. (PC7, MK4, PC6)
3. Discuss the treatment of acute pain through various modalities, including oral, intravenous, neuraxial, and regional techniques, as well the ethics involved in the treatment of pain. (MK8, PC3, SL2)
4. Communicate basic Advanced Cardiac Life Support principles with particular attention placed on airway management and understand the basics of Difficult Airway Management as demonstrated in a simulation course. (MK1, PR2, IP3, PD1, PL2)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Participation in weekly assignments in the operating rooms and a 5-10 minute oral presentation on one of the patients.
2. Attendance at Tuesday morning grand rounds, Tuesday afternoon simulation sessions (led by attending anesthesiologist), Wednesday afternoon resident lectures, Thursday afternoon medical student lectures (led by an anesthesia resident).
3. Completion of at least 1 night of call in the main operating rooms.
4. Completion of assigned reading chapters each week associated with required lectures.

PATIENT ENCOUNTERS: Students will be expected to work-up patients with potential multiple conditions:
1. Patients with cardiovascular disease undergoing surgery
2. Patients undergoing labor epidural or c-section
3. Patients undergoing surgery related to trauma
4. Pediatric patients

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation.
2. Direct observation of clinical skills performance by residents and attendings each day and discussion of didactic/reading topics, with application to daily clinical cases.
3. An oral presentation on a patient, including medical problems, type of surgery, anesthesia, and other interesting issues.
4. A mid-point evaluation form will be completed half way through the rotation in order for the student to be assessed on their performance.

Will students be expected to participate in call? ☒ YES ☐ NO
Students are expected to take call when their assigned resident is on call, with the exception of Friday-Monday night call.

ANES 862: Medical-Surgical ICU

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Course Coordinator: Laura Seeback Matthews
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COURSE DESCRIPTION:
Fourth-year medical students will work with interdisciplinary critical care teams lead by both Pulmonary Critical Care and Anesthesia Critical Care physicians to learn about evaluation and management of acute care illness in both medical and surgical patient populations. Students will be directly involved in assessing, stabilizing, and treating critically ill patients with a variety of complex diseases with a focus in but not limited to Heme/Onc and GI. With supervision and guidance, students will be primarily responsible for their patients and will gain experience in developing clinical plans for critically ill patients. Students will become familiar with the basics of mechanical ventilation, intravenous fluids, shock and vasoactive medications, surgical emergencies, procedural indications and end-of-life care issues in the ICU. Students will observe and potentially perform invasive procedures.

Students will participate in a **mandatory** orientation day to cover essential critical care subject matter. Participation is expected at all simulation-based procedural skills modules unless absence is excused. Students will be expected to work at least 20 shifts. Make-up dates for unexcused absences will take place the final weekend of the rotation and then at the discretion of the unit director. There is no expectation of night call, but it can be offered by the unit director as an integral learning experience or as make-up for unexcused absences. This rotation is recommended for students with an interest in Anesthesiology, Emergency Medicine, Family Medicine, Internal Medicine, Surgery.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Assess a critically ill patient and develop a timely, prioritized, and evidence-based plan for initial stabilization. (PC1, PC3)
2. Apply knowledge to develop evidence-based clinical plans for critically ill patients, including appropriate use of hemodynamic monitoring, application of ventilator modes and settings, and initiation and titration of vasomotor support. (MK4, MK5, PC3, PC6)
3. Be able to obtain Informed Consent for diagnostic and therapeutic tests and procedures including verbalization of risks, benefits and alternatives. (PC3, PC7, ICS1, SBP3)
4. Participate in and potentially perform procedures under direct supervision, including placement of arterial lines and central venous catheters while learning proper sterile technique. (MK8, PC7)
5. Demonstrate skills in the utilization of bedside Point-of-Care ultrasound for diagnosis in appropriate ICU patients. (PC1, MK5)
6. Identify relevant information in the primary medical literature regarding their patients' disease states, and incorporate information from the literature into presentations and documentation. (PL3, CS5)
7. Demonstrate effective and professional interpersonal and communication skills, and model ethical behavior. (CS1, PR1, PR2)
8. Demonstrate empathy and discuss end of life issues with the patient and family including giving bad news. (PC1, PC3, CS1, CS2, CS3, PR3, PR1, PR2)
9. Perform a basic family meeting to discuss goals of care including discussing and obtaining code status. (PC1, PC4, CS1, CS2, CS3, CS4, PR1, PR2, PR3)
10. Work within a multidisciplinary team on daily rounds as an effective team member including mitigating patient risk and early identification of potential medical errors. (PR1, SL4, IP2, IP3, IP4)
11. Understand quality improvement metrics in the ICU and the team's role in reducing hospital acquired infections including VAP, CAUTI, CLASBI, etc. (MK7, PR4, PL4, PL5, PL6, SL3, IP4)
12. Concisely summarize a patient's critical illness and hand off important clinical information efficiently to other team members and consultants. (CS1, CS5, IP1, IP2, IP3, PC6)
13. Demonstrate an understanding of the pharmacology of sedation in the ICU including the prevention and treatment of pain, agitation and delirium (MK2, MK3, MK4, MK5, PC3, PL4)
14. Demonstrate a knowledge of airway management devices including high flow nasal cannula, NIV, BVM, LMA and endotracheal intubation. (MK1, MK4, MK8, PC6, PC7, CS1, CS2, PR3, PL2)
15. Describe the basic aspects of antimicrobial treatment and rational use of anti-infective therapeutic agents, as well as the negative patient complications of antimicrobial overuse. (PC3, PC6, PL3, PL6)

16. Understand the differential diagnosis, evaluation and management for Acute Kidney Injury (AKI) through lab interpretation and radiological studies including the indications for acute dialysis therapy. (MK1, MK3, MK4, MK5, MK7, PC1, PC2, PC3, CS1)
18. Write complete and succinct systems based medical plan with H&Ps and daily progress notes in EPIC. (MK3, MK4, MK5, PC2, PC3, PC6, CS1, CS5, PR1, PR4, PR5)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Students will participate in all aspects of care including initial assessment, diagnosis, management and patient/family communication and decision making for critically ill patients.
2. Students will be expected to present their patients on rounds, and patient-centered clinical and educational topics will be discussed
3. Students will receive instruction in ventilator management, central line use, and invasive and non-invasive hemodynamic monitoring.
3. Students will learn about pharmacotherapy in the ICU, including vasopressors, antibiotics, and sedatives, and analgesic medications.
4. Students will have the opportunity to learn about and potentially perform a variety of procedures, including central venous catheter placement, arterial catheter placement, paracentesis, and thoracentesis.
5. Students will learn the principles of bedside point-of-care ultrasonography including thoracic, abdominal and bedside echocardiography.
6. Students will attend and participate in didactic teaching session and simulation modules as part of the curriculum

PATIENT ENCOUNTERS: Students will be expected to work-up patients with conditions from all organ systems, including:
1. Acute hypoxic/hypercarbic respiratory failure due to pneumonia, acute respiratory distress syndrome, COPD, or other processes
2. Shock due to distributive pathophysiology (e.g., septic shock), cardiogenic compromise, obstructive mechanisms, or hypovolemia
3. Acute renal failure including hyperkalemia, pulmonary edema, refractory acidemia and necessitating acute hemodialysis
4. Acute surgical emergencies
5. Hemorrhagic shock due to gastrointestinal bleeding, retroperitoneal bleed, or intra-peritoneal bleeding.
6. Neurologic conditions such as pain management, coma, encephalopathy, CVA and delirium

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation
2. Direct observation of patient care skills by the attending physician, fellows, and residents on service.
3. Attending physicians and fellows will provide students with a verbal evaluation at end of rotation.
4. Students will receive a mid-point evaluation of their performance.

ANES 865: Pain Management

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Does this rotation accept visiting students? ☐**YES**☒ NO

COURSE DESCRIPTION:
The pain management rotation is an opportunity for the student to learn the fundamentals of pain and pain management. The rotation is intended to provide an overview of the neuroanatomy, physiology, pathology, diagnosis and treatment of pain. Students are exposed to a wide variety of disease processes requiring pain management and these include acute, chronic, and cancer pain in the adult and pediatric populations.

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Discuss the types of pain and classification of pain. (MK1, MK2)
2. Demonstrate understanding of pharmacology of local anesthetics, opioids and neuropathic pain medications. (MK5, MK2)
3. Identify the landmarks and techniques for performing, indications, risks, and complications for nerve blocks and neuraxial procedures in pain treatment. (MK7, MK8)
4. Demonstrate knowledge of the psychosocial aspects of chronic pain. (MK6, MK8)
5. Demonstrate understanding of multimodal therapy in delivery of comprehensive pain care. (MK7, MK8)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Attendance at Tuesday morning grand rounds, Tuesday afternoon simulation sessions (led by attending anesthesiologist), Wednesday afternoon resident lectures, Thursday afternoon medical student lectures (led by an anesthesia resident) optional.
2. Attendance and participation in clinic visits and discussions of patients.
3. Evaluations of and interaction with the patients.

PATIENT ENCOUNTERS: Students will be expected to work-up patients with these specified conditions:
1. Acute pain
2. Chronic pain
3. Cancer pain

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation.
2. Direct observation of the student's interviewing and examining of the patients.
3. Following each patient interaction, the student will give an oral presentation describing the findings along with a diagnosis and treatment plan.
4. A mid-point evaluation form will be completed half way through the rotation in order for the student to be assessed on their performance.

Will students be expected to participate in call? ☐ **NO** ☒

ANES 866: Cardiovascular ICU

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COURSE DESCRIPTION:
Fourth-year medical students will work with an interdisciplinary critical care team lead by Critical Care Anesthesiologists to manage critically ill cardiac patients in consultation with cardiovascular surgeons and cardiologists. Students will be directly involved in assessing, stabilizing, and treating critically ill patients with a variety of complex cardiovascular diseases. With supervision and guidance, students will be primarily responsible for their patients and will gain experience in developing clinical plans for critically ill patients. Students will become familiar with the basics of mechanical ventilation, shock and vasoactive medications, procedural indications and end-of-life care issues in the ICU. Students will observe and potentially perform invasive procedures.

Students will participate in a **mandatory** orientation day to cover essential critical care subject matter. Participation is expected at all simulation-based procedural skills modules unless absence is excused. Students will be expected to work at least 20 shifts. Make-up dates for unexcused absences will take place the final weekend of the rotation and then at the discretion of the unit director. There is no expectation of night call, but it can be offered by the unit director as an integral learning experience or as make-up for unexcused absences. This rotation is recommended for students with interest in anesthesiology, internal/family medicine, emergency medicine and surgical subspecialties

LEARNING GOALS & OBJECTIVES: At the completion of this clinical rotation students should be able to do the following:
1. Assess a critically ill patient and develop a timely, prioritized, and evidence-based plan for initial stabilization. (PC1, PC3)
2. Apply knowledge to develop evidence-based clinical plans for critically ill patients, including appropriate use of hemodynamic monitoring, application of ventilator modes and settings, and initiation and titration of vasomotor support. (MK4, MK5, PC3, PC6)
3. Develop clinical skills in evaluating and managing acute cardiac illnesses, including acute myocardial infarction, tachy and bradyarrhythmias, advanced heart failure complicated by cardiogenic shock, and severe valvular pathology. (MK5, PC2, PC3, PC6)
4. Discuss indications for and risks and benefits of the following therapeutic interventions used in the CCU: invasive hemodynamic monitoring, percutaneous coronary intervention, pacemakers and implantable cardiac defibrillator, intra-aortic balloon pumps, initiation and titration of inotropic medications in cardiogenic shock, and temporary and durable mechanical circulatory assist devices. (MK5, MK8, PC3, PL2)
5. Accurately and reliably interpret the following diagnostic testing modalities: ECG, echocardiogram, coronary angiography, and real-time hemodynamic data from PA catheters. (MK5, MK6, MK8, PC1, PC2, PL2)
6. Be able to obtain Informed Consent for diagnostic and therapeutic tests and procedures including verbalization of risks, benefits and alternatives. (PC3, PC7, ICS1, SBP3)
7. Participate in and potentially perform procedures under direct supervision, including placement of arterial lines, central venous lines and Swan-Ganz catheters while learning proper sterile technique. (MK8, PC7)
8. Identify relevant information in the primary medical literature regarding their patients' disease states, and incorporate information from the literature into presentations and documentation. (PL3, CS5)
9. Demonstrate effective and professional interpersonal and communication skills, and model ethical behavior. (CS1, PR1, PR2)
10. Demonstrate empathy and discuss end of life issues with the patient and family including giving bad news. (PC1, PC3, CS1, CS2, CS3, PR3, PR1, PR2)
11. Perform a basic family meeting to discuss goals of care including discussing and obtaining code status. (PC1, PC4, CS1, CS2, CS3, CS4, PR1, PR2, PR3)
12. Work within a multidisciplinary team on daily rounds as an effective team member including mitigating patient risk and early identification of potential medical errors. (PR1, SL4, IP2, IP3, IP4)
13. Understand quality improvement metrics in the ICU and the team's role in reducing hospital acquired infections including VAP, CAUTI, CLASBI, etc. (MK7, PR4, PL4, PL5, PL6, SL3, IP4)
14. Concisely summarize a patient's critical illness and hand off important clinical information efficiently to other team members and consultants. (CS1, CS5, IP1, IP2, IP3, PC6)

15. Demonstrate an understanding of the pharmacology of sedation in the ICU including the prevention and treatment of pain, agitation and delirium (MK2, MK3, MK4, MK5, PC3, PL4)
16. Demonstrate a knowledge of airway management devices including high flow nasal cannula, NIV, BVM, LMA and endotracheal intubation. (MK1, MK4, MK8, PC6, PC7, CS1, CS2, PR3, PL2)
17. Describe the basic aspects of antimicrobial treatment and rational use of anti-infective therapeutic agents, as well as the negative patient complications of antimicrobial overuse. (PC3, PC6, PL3, PL6)
18. Write complete and succinct systems based medical plan with H&Ps and daily progress notes in EPIC. (MK3, MK4, MK5, PC2, PC3, PC6, CS1, CS5, PR1, PR4, PR5)

INSTRUCTIONAL METHODOLOGIES AND ROTATION ACTIVITIES: Students on this rotation will be expected to learn and achieve the educational goals and objectives through the following methodologies and activities:
1. Students will participate in all aspects of care including initial assessment, diagnosis, management and patient/family communication and decision making for critically ill patients.
2. Students will be expected to present their patients on rounds, and patient-centered clinical and educational topics will be discussed
3. Students will receive instruction in ventilator management, central line use, and invasive and non-invasive hemodynamic monitoring.
3. Students will learn about pharmacotherapy in the ICU, including vasopressors, antibiotics, and sedatives, and analgesic medications.
4. Students will have the opportunity to learn about and potentially perform a variety of procedures, including central venous catheter placement, arterial catheter placement, Swan-Ganz catheter placement.
5. Students will attend and participate in didactic teaching session and simulation modules as part of the curriculum

PATIENT ENCOUNTERS: Students will be expected to work-up patients with conditions from all organ systems, including:
1. Acute hypoxic/hypercarbic respiratory failure
2. Shock due to cardiac pump failure, distributive pathophysiology (e.g., septic shock), obstructive mechanisms.
3. Acute cardiovascular compromise including coronary artery disease, congestive heart failure, arrhythmias, valvular dysfunction
4. Acute cardiovascular surgical emergencies

EVALUATION / FEEDBACK METHODS: Students will be evaluated using the following methods:
1. E*Value Clinical Performance Evaluation
2. Direct observation of patient care skills by the attending physician, fellows, and residents on service.
3. Attending physicians and fellows will provide students with a verbal evaluation at end of rotation.
4. Students will give their attending a mid-point evaluation form for performance assessment.