

Departmental Curriculum – Patient Care

Goals

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of medical problems and the promotion of health. Residents are expected to:

- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- Gather essential and accurate information about their patients
- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- Develop and carry out patient management plans
- Counsel and educate patients and families
- Use information technology to support patient care decisions and patient education
- Perform competently all medical and invasive procedures considered essential for the area of practice
- Provide health care services aimed at preventing health problems or maintaining health
- Collaborate with health care professionals, including those from other disciplines, to provide patient-focused care

Objectives

It is expected that by the end of each academic year the resident will generally be able to perform patient care as follows:

- CA-I, with assistance
- CA-II, independently with assistance in some instances
- CA-III independently

Information Gathering, Sharing and Interpretation

- Demonstrate proficiency in use of information systems technology (such as LCR Web, Day-stay applications, PACS) to assist in patient care
- Develop an efficient, focused, and comprehensive pre-procedure/pre anesthetic evaluation, including history, physical exam, and review of available studies, under both elective and emergent conditions, for all ages, including pregnant patients
- Recognize when appropriate subspecialty consults are needed, i.e., cardiology, pain management, etc.
- Order additional studies to establish a diagnosis or evaluate severity and responsiveness to intervention appropriately
- Demonstrate knowledge of requirements and anesthetic implications that are specific to an individual patient, i.e., positioning, special monitoring, potential for blood loss, potential for post-operative pain
- Assign an accurate ASA classification
- Develop a primary, patient-specific management plan, with a reasonable alternate plan, for all levels of ASA classification for patients in all age groups, for both elective and emergent procedures; the plan should include consideration of

pre-existing medical issues and patient requests, anticipate possible intra-operative difficulties and pursue strategies to prevent possible post-operative complications.

- Defend his or her management plan using EBM
- Display a facilitative approach to avoid unnecessary delays or cancellations
- Perform documentation of case-specific evaluation and care data, according to Department Standards

Organization and Preparedness

- Perform safe, efficient, timely and accurate pre-anesthetic checks of all pertinent equipment and supplies (such as anesthetic machines, compressed gas cylinders, airway management supplies, monitors, suction, medications, invasive devices, etc.) involved with the case
- Prepare the operating room, anesthetic machine, airway equipment, accessory equipment, epidural or block kit, emergency and elective drugs etc. appropriately for each case
- Obtain the appropriate opioid medications from the Pyxis machine prior to entering the operating room with the patient
- Place equipment and drugs in neat and methodical manner
- Demonstrate vigilance and attention to detail during all aspects of care
- Check the patient's identity, procedure to be performed, consent, and side to be blocked or operated on, when applicable
- Ensure that the operating room team is ready for the patient to enter the operating room
- Know the procedure for obtaining and verifying availability of transfusion products

Technical Skills and the Use of Equipment

- Demonstration of standard monitoring, general bag-mask ventilation, conventional laryngoscopy and endotracheal intubation, insertion and use of LMA's, and safe use of the anesthesia machine and or ventilators
- Develop expertise in placement of peripheral IV's in awake and anesthetized patients, including external jugular IV's and large caliber lines for rapid infusion
- Demonstrate knowledge and safe use of various infusion devices
- Place central lines, including IJ/EJ/subclavian approaches efficiently, safely and accurately
- Demonstrate proficiency in placing
 - o Femoral, internal jugular and subclavian venous lines
 - o Central line introducer, and demonstrates proper placement and management of Swan-Ganz catheters
 - o Radial and femoral arterial lines
- Employ Doppler technology to facilitate line placement
- Utilize adjunct airway management equipment such as oral and nasal airways, COPA airway, gum elastic bougie, light wand, etc.
- Demonstrate correct placement and use of various LMA's (Classic, disposable, Proseal, Fast Trach)
- Demonstrate various techniques/alternatives for topicalization and preparation of the airway for awake fiberoptic intubation
- Demonstrates safe airway management of patients at risk for aspiration, including positioning, "rapid-sequence induction" technique, and correct application of cricoid pressure
- Demonstrates effective and efficient use of fiberoptic equipment to secure the difficult airway, in both awake and asleep patients

- Demonstrates appropriate use of PEEP and CPAP devices used in one-lung ventilation
- Demonstrates correct technique for placement of double-lumen ETT, including auscultatory and fiberoptic verification of placement
- Demonstrates proper patient selection for regional anesthetic procedures, and proper preparation of patient before performing block (positioning, IV access, monitor application and use, resuscitation equipment)
- Demonstrates routine for verification of correct side where block is to be placed
- Demonstrates proper application of knowledge to perform each block
- Uses anatomy to correctly define and label landmarks
- Use of nerve stimulator equipment
- Use of Doppler technology in placing catheters
- Proper needle/catheter selection and use
- Use of double cuffed tourniquets
- Appropriate choice and dosing of local anesthetic agents and adjunct drugs (epi, bicarb, narcotics, etc.)
- Can perform effectively with good technique, in a timely fashion, these regional procedures:
 - o Spinal anesthesia, both one shot and continuous technique
 - o Epidural anesthesia, various levels, one shot and catheter technique
 - o Epidural blood patch
 - o Combined spinal/epidural anesthesia
 - o Caudal anesthesia
 - o IV regional
 - o Peripheral nerve blocks for both upper and lower extremities
- Correctly uses train-of-four nerve stimulation to guide safe and effective use of neuromuscular blocking agents and to measure effectiveness of reversal agents
- Demonstrates use of transport monitoring equipment, including monitor operation and application, zeroing transducers, etc.
- Demonstrates proper use of oxygen supplying equipment including tanks, valves, Ambu bag, Jackson-Reese masks. Appropriately selects specific delivery device to clinical situation.
- Can demonstrate straightforward pain management techniques used in diagnosis and treatment of chronic pain (trigger point injections, epidural injections, selective nerve root blocks)
- Demonstrates safe and appropriate use of patient-warming devices

Communication / Teamwork

- Communicate the patient care plan to the attending physician in a clear, concise, logical and timely fashion, before initiating patient care
- Defend his or her patient care plans to the attending physician
- Display flexibility and openness to accept changes to the plan
- Provide a full PARQ discussion with the patient, including explaining the anesthetic care plan, risks and care alternatives to the patient and patient's family, at the patient's level of understanding, in a reassuring, supportive manner.
- Employ good listening skills and empathy when dealing with patients and families.
- Utilize clear, effective, and respectful communication with nursing staff, technicians, and surgeons regarding patients care plans, and while performing patient care.
- Maintain ongoing effective and appropriate communication with surgeons during the course of anesthesia and surgery

- Communicates appropriately with surgeon and anesthesiology attending during times of dynamically changing conditions during surgery, or during the development of unexpected events or conditions
- Request assistance in a timely fashion when appropriate, and appreciates and recognizes his or her own personal limitations, putting patient well-being first
- Perform complete, accurate and concise written documentation of patient assessment and patient care
- Responds to pages, is available, reliable, and punctual about patient care and patients' condition

Application of Knowledge / Patient Management

- Choose appropriate pre-medications tailored to the patient, and is aware of options available including drug choices and different routes of delivery (PO, IV, IM, intranasal, rectal). Can describe advantages and disadvantages of each.
- Manage patient care during the dynamics of induction of anesthesia, as well as during periods of instability during the course of the anesthetic care (i.e., surgical bleeding, patient co-existing disease exacerbation, drug reaction, crisis management)
- Maintain vigilance and record-keeping of patients' vital signs and condition at all times during patient care
- Anticipate surgical events and/or stressors during anesthetic care and is ready to manage their effect on the anesthetic and on the patients condition
- Evaluation of the anesthetic monitor, and its functions to retrieve vital sign data
- Interpret ECG monitoring data including rhythm disturbances and ST segment interpretation to diagnose and treat problems
- Interpret data from end-tidal gas monitoring, including diagnosis of ventilation issues from examination of the end-tidal CO₂ waveform, and make appropriate adjustments in the anesthetic and the ventilation
- Interpret laboratory data, including arterial and venous blood gases as well as blood chemistries and hematology and coagulation tests, and can appropriately apply information to the correct diagnosis and treatment of patient
- Design and carry out an anesthetic care intravascular management plan
- Interpret volume status data to diagnose and treat patient (i.e., I/O's CVP, Swan-Ganz)
- Explain the trigger for transfusion of various blood products, and can back up decision to transfuse with appropriate calculations.
- Recognize the complications of transfusion, their prevention, and treatment
- Exhibit techniques enabling return of effective spontaneous patient ventilation during general anesthesia, as well as demonstrate techniques of ensuring adequate and safe reversal of neuromuscular blocking agents.
- Apply of criteria for safe extubation.
- Assess patient risk, articulate and apply patient specific plan for the prevention and treatment of post-operative nausea and vomiting
- Assess patient risks/needs, then articulate and apply patient specific plan for the prevention and treatment of acute post-operative pain. Includes peri-operative use of epidural and spinal techniques, titration and effective dosing of opioids, management of PCA and PCEA, use of adjunct medications (NSAIDS, Clonidine, etc.)
- Demonstrates techniques of safe extubation, including measures to protect patient from injury during emergence from general anesthesia
- Demonstrates the recovery position after general anesthesia
- Demonstrates preparedness, vigilance and safety in patient transport to PACU and ICU

- Transfers care of the patient after anesthesia/procedure to responsible party (PACU nurse, ICU, SSU, etc.) in a manner that ensures patients safety and comfort and continuity of care
- Perform post-anesthetic visits with due diligence
- Know indications for, and can describe advanced pain management techniques (neurolytic and neuroaugmentation techniques, spinal cord stimulation, chronic neuroaxial drug delivery techniques)
- Recognizes and correctly interprets various patterns in fetal heart rate monitoring (bradycardia, tachycardia, types of decelerations)
- Describe the functions of the cardiopulmonary bypass machine

Problem Solving

- Remain calm and focused in times of crisis
- Communicate effectively in times of dynamically changing conditions
- Solve the problems, and display adaptability to change plan to another approach, when current approach does not appear to be effective
- Stabilize patient's vital signs while trying to diagnose and treat the underlying problem
- Ensure proper functioning of anesthetic equipment, the anesthetic machine, and monitors, at all times during patient care.
- Detect and recognize potential problems early, and correct them in a proactive fashion
- Diagnose and correct conditions like hypoxia, hypotension, hypertension, hypercarbia, oliguria, inadequate ventilation etc., using a prompt, thorough and logical approach.
- Explains etiology, symptoms and treatment of malignant hyperthermia
- Create an effective management plan for malignant hyperthermia, including asking for immediate assistance and delegating tasks in order to ensure rapid and coordinated treatment
- Demonstrate knowledge of, and demonstrate the correct procedure for handling a suspected transfusion reaction
- Describe how to diagnose and treat a suspected anaphylactoid / anaphylactic reaction
- Diagnose and treat suspected post-dural puncture headache.
- Perform an epidural blood patch
- Explain the diagnosis and management of suspected perioperative peripheral nerve injury
- Diagnose and manage peri-operative ocular injury
- Diagnose and manage peri-operative dental injury
- Describe and implement a logical approach to diagnose delayed emergence from anesthesia