

**Goals and Objectives of a Perioperative Medicine Rotation for the Junior Orthopaedic Trainee**

Medical Expert:

Content:

1. To acquire core Perioperative content.
2. To become familiar with landmark Perioperative trials.
3. To become familiar with ongoing Perioperative clinical studies and recruitment and consent.
4. To acquire familiarity with the role of biomarkers in Perioperative Medicine.
5. To acquire familiarity with risk calculators such as the RCRI, ACS NSQIP PMP, Gupta perioperative cardiac risk, Gupta perioperative pulmonary risk, delirium risk score etc.
6. To enhance clinical decision-making on preoperative testing, delay or cancellation of surgery, postoperative monitoring and post discharge follow-up.

Teaching in the Medical Expert Role:

1. Teaching will occur daily as part of rounds.
2. Teaching and coaching will occur during assessment and presentations of new patients.
3. Learners are encouraged to attend Perioperative Journal Club.
4. A clinical case rounds occurs every Tuesday from 12:00pm to 1:00pm.
5. Dedicated learner teaching sessions will occur every Thursday from 12:00pm to 1:00pm.
6. Learners are encouraged to create a personalized learning plan, which can be shared with the staff and senior learners on the team who will assist in ensuring that a multipronged approach can be established to meet these needs.

Communicator:

1. Learners will have an opportunity to develop rapport and therapeutic relationships with patients and families through continuity of care.
2. Learners will develop the ability to elicit and distill relevant information and to present to the staff and team.
3. Learners will have opportunity to lead and/or attend patient and family meetings.
4. Learners will be exposed to team-based care delivered by physicians, nurse practitioners, nursing, allied health and other subspecialties.
5. Learners will have opportunity to enhance their dictation skills.

Scholar:

1. Learners will be exposed to role modeling of professionalism and lifelong learning.
2. Learners will have exposure to critical appraisal and assessment of literature and its appropriateness to the care of individual patients.
3. Learners will have opportunity to present topics to the group and to teach to peers, team members and allied health professionals.
4. Learners will be exposed to ongoing research and will be encouraged to participate in and contribute to knowledge dissemination.

## Collaborator:

1. Learners will be part of an interprofessional team that may include medical and physician assistant students, trainees from multiple programs, Perioperative fellows, faculty from different subspecialties and allied health (OT, PT, nursing, social work and pharmacy).
2. Learners will actively engage with other clinical faculty including surgeons and anesthesiologists.
3. Learners will interact with clinic and administrative staff in arranging outpatient testing and follow-up.

## Leader:

1. Learners at different levels will have opportunity to develop and demonstrate leadership skills in managing a Perioperative team, managing clinical activities, establishing a teaching schedule, contributing to evaluations and leading meetings.
2. Learners at different levels will have an opportunity to role model prioritization, professionalism, ethics and integrity and professionalism.
3. Learners at different levels will have an opportunity to develop and demonstrate resource management.
4. Learners at different levels will have an opportunity to develop and demonstrate patient advocacy.
5. Learners at different levels will have an opportunity to develop and demonstrate administrative skills.

## Health Advocate:

1. Learners will have an opportunity to advocate for patients and families on a daily basis related to clinical care needs.
2. Learners will have an opportunity to advocate for patients in their needs for conjoint care from allied health and other specialties.
3. Learners will have an opportunity to advocate for patients for community assistance.
4. Learners will have an opportunity to advocate for patients in the promotion of overall health (i.e., smoking cessation, addictions, bariatrics, rehabilitation, etc.).
5. Learners will have an opportunity to advocate for patients in family meetings.
6. Learners will have an opportunity through knowledge dissemination to advocate for implementation of current guidelines in the care of individual patients, communities and populations.
7. Learners will have an opportunity to share current trials with patients and enroll patients if interested.

## Professionalism:

1. Learners will have an opportunity to gain exposure to role modeling of professionalism by other team members and other staff, which will include cultural sensitivity, ethics and integrity, respect, punctuality, positive attitude, advocacy and honesty.
2. Learners will have an opportunity to demonstrate and gain exposure to team dynamics, commitment, active participation, taking on appropriate workloads, setting personal expectations and actively participating to ensure the wellness of themselves and colleagues.

3. Learners will have an opportunity to develop and demonstrate awareness of the expectations of formal bodies IE, CPSO, OMA, CMA, CMPA, etc.
4. Learners will have an opportunity to develop and demonstrate medical bioethics.
5. Learners will have an opportunity to develop and demonstrate knowledge of the medical legal aspects of Perioperative Medicine.

## **Evaluation:**

Each of the above domains will be evaluated on a daily basis with feedback being provided in real time. Specific components will be evaluated through on-demand direct observation, EPA assessments, contribution during rounds and teaching sessions, individual presentations of clinical topics, grand rounds, Journal Club etc. and through a final in-training evaluation report composed of feedback from learner colleagues and faculty. There will be formal face-to-face verbal feedback at the end of each rotation in conjunction with the completion of the written in-training evaluation report.

All the above domains will be assessed on an ongoing basis and through individual clinical and teaching and learning encounters. Faculty will meet with learners early in the rotation if there are any concerns about learners meeting the expectations for any of the above domains. This evaluation will include specific examples and a mutually developed learning plan and evaluation schedule for the remainder of the rotation. Learners are encouraged to share specific evaluation expectations (personal or program) with the faculty at orientation and to take responsibility for ensuring these are fulfilled.

## **Specific Learning Goals and Objectives for Students/Trainees at Different Levels:**

The teaching and learning for all the domains above will be modified to meet the different learning goals and objectives of students and trainees at different levels. The level of responsibility and the expectations will be matched to the learner level, program and expectations. The teaching and learning and expectations will be graded to reflect the learner level and program.

## **Specific objectives for the orthopedic trainee include:**

Learning Goals of a Perioperative Medicine Rotation for the Junior Orthopaedic Trainee

1. Initial approaches for the following Perioperative presentations [New presentations or exacerbations of pre-existing conditions]:
  - a. Arrhythmias [Bradycardia and Tachycardia]
  - b. Shortness of Breath
  - c. Altered mental status
  - d. Fever
  - e. Syncope / pre-syncope
  - f. Urinary retention
  - g. Constipation
  - h. Acute Coronary Syndrome
  - i. MINS
  - j. Perioperative Infections
  - k. Venous Thrombosis
  - l. Stroke
  - m. Perioperative Analgesia

- n. Medication Optimization
  - o. Acute exacerbations of chronic conditions [CAD, CVD, PAD, HTN, COPD, DM, CKD, Valve Disease and pulmonary HTN]
2. Appropriate initial management of all the above conditions as well as specific common diagnoses including but not limited to:
- a. Bradycardia and Tachycardia (A-Fib/SVT/AVNR)
  - b. Delirium
  - c. Atelectasis
  - d. Pneumonia
  - e. Pulmonary Embolism
  - f. Obstructive Sleep Apnea
  - g. Bleeding
  - h. Myocardial Injury after Non-cardiac Surgery (MINS)
  - i. Electrolyte abnormalities [ Sodium, Potassium, Calcium, magnesium, Phosphate]
  - j. Hypo/Hyper glycemia
  - k. Acute Kidney Injury
  - l. Congestive Heart Failure
  - m. Acute postoperative pain
  - n. Urinary Tract Infection
  - o. Blood Pressure [Hypertension and Hypotension]
  - p. Acute stroke
  - q. Addictions [Alcohol, Narcotics, Tobacco]
3. Pre-operative optimization
- a. Blood work – when and which to order
    - i. BNP, troponins, baseline ECGs, chest XR, echocardiography, INR
  - b. Medications – When and which to hold, when and which to re-start
    - i. Antihypertensives, antihyperglycemics, beta-blockers, anticoagulation, thyroid supplements, bisphosphonates, denosumab
    - ii. Risk Scores [RCRI, BIMS, Frailty, Gupta (Respiratory), STOP BANG, Delirium]
    - iii. Pre-operative testing [Echo, Sleep Study, PFTs, Holter, Cardiac (Angio, Nuclear, PET)]
4. Post-operative optimization
- a. Which patients need ward bed, telemetry, step-down bed, ICU bed, CCU bed postoperatively?
  - b. In addition to management of above conditions, which patients need outpatient follow up, cardiac risk stratification, ASA/statin/beta blocker, anticoagulation?
  - c. Optimization of chronic conditions
  - d. Assessment for medication errors
  - e. Post-operative testing for acute issues or optimization of chronic conditions
  - f. Assessment for early discharge and RAM follow-up