

Advanced Core Curriculum
Perioperative Medicine and Pain

Contacts:

Co-Discipline Leaders

Samuel Irefin, MD (Anesthesia)

irefins@ccf.org

Desk E31

216-445-1152

Beeper 24239

Frank Michota, MD (General Internal Medicine)

MICHOTF@ccf.org

Desk A13

216-445-8383

Beeper 24562

Description of Rotation

The focus of this 4-week advanced core curriculum in Perioperative Medicine and Pain is to provide each student with the knowledge, skills and attitudes that are necessary to determine the risk of perioperative morbidity and mortality in patients undergoing non-cardiac surgery. This rotation will enable students to learn how to optimize the patient's condition preoperatively, manage patients both intraoperatively and post-operatively. In addition they will acquire knowledge, skills and attitudes regarding both acute and chronic pain management.

Each student will spend one week in the Internal Medicine Preoperative Assessment Consultation Treatment (IMPACT) Center with a hospitalist and in the Preanesthesia Evaluation Clinic (PACE) with an anesthesiologist; one week in the operating room with an anesthesiologist managing adults undergoing surgery; one week on the Internal Medicine consult service with hospitalists and one week on the acute pain service and the pain management clinic.

During the pain management week, medical students will spend their week-long rotation divided between outpatient pain management clinic (3 days) and inpatient hospital service (2 days). The curriculum will cover the following areas:

- Acute Pain Management
- Chronic and Cancer Pain Management
- Interventional Pain Management
- Interdisciplinary Approach to Pain Medicine

The goal of the acute pain service experience will be to establish the concept that acute pain is a symptom of an underlying injury and to expose medical students to the

management of acute pain. The goal of the chronic pain management experience will be to establish the concept that chronic pain is a disease not a symptom and to expose medical students to chronic pain related syndromes and to introduce the multidisciplinary team approach to manage chronic pain. The primary area of knowledge will include chronic pain syndromes, diagnostic and therapeutic interventions and interaction with other disciplines (physical therapy, psychology, rehabilitation, orthopedics, neurosurgery, oncologists, etc.) to manage chronic pain problems.

Staff Responsibilities

Staff will primarily be responsible for the teaching and evaluation of students in this rotation. They will be responsible for orienting students on the first day of each new clinical experience and for providing attention and day-to-day consistency for the learning objective outlined below.

Student Role/Responsibilities:

Outpatient Preoperative Medicine- 2-3 days in the IMPACT Center (Desk A13) and 2-3 days in the PACE Clinic (desk A14)

- 1) You are expected to do a thorough preoperative evaluation on at least 1 patient each day in the IMPACT Center and the same number in the PACE clinic. You should complete at least 4 patient work-ups in the IMPACT center and the PACE clinic per 1-week block. You are expected to do the clinical notes in Epicare (EMR), present all new patients to your attending and to log these patients. Generally, you will receive feedback from the attending on your oral presentation and on the content of the presentation the same day that you present. If you don't receive specific feedback about your write-ups from your attending, be sure to ask for this.
- 2) There is no call this block
- 2) Clinical medicine is best learned by active involvement in patient care with as much responsibility to patient care as your level of training allows. We urge you to participate in the decision making process that relates to your patients.

Operating Room and the Post-Anesthesia Care Unit (PACU)

1- Week

- 1) You are expected to meet your assigned preceptor at 6:00 a.m. You will observe, learn and then be expected to perform airway assessment and management under close supervision. It is expected that you will be involved in at least 4 cases over this week long experience. You will be taught and then expected to perform

hemodynamic monitoring, volume assessment and resuscitation, post anesthesia care management and perioperative transfusion

- 2) You will perform procedures under supervision including: neuroaxial blockade, peripheral blocks, chronic pain procedures, mask ventilation, laryngeal mask airway intubation

Medical Consultation on the General Internal Medicine Service

1 week

During this week you will spend time seeing post-operative medical issues. You will be expected to work-up and follow at least 4 patients. These must be logged as well.

Acute and Chronic Pain Service

1 week

During this week you will spend time evaluating and managing patients with both acute and chronic pain.

Assessment:

- a. The discipline leaders will oversee the student's learning portfolio and ensure that the learning objectives are being met.
- b. Assessment will be based on patient care issues, medical knowledge, communication skills, professionalism, practice and system related issues and patient logs. Satisfactory completion of this rotation requires that each student complete patient & procedure logs. Attendance and participation in all seminars and Journal Clubs is mandatory.

Learning objectives of the Rotation

Learning Objective	How they will be met
1. Describe the role of the Perioperative consultant and the principles and ethics surrounding medical consultation.	Orientation, IMPACT, PACE, Seminars
2. Perform and document the complete pre-operative assessment for one patient, including: a). Discussion of patient specific risk, surgery specific risk and anesthesia related risk, b). List various options for anesthesia, c). Applying an evidence-based approach to identifying, selecting and interpreting pre-operative laboratory testing, and d). Outlining appropriate risk reduction strategies and therapies.	IMPACT, PACE
3. Describe and demonstrate the principles of airway management.	OR
4. Describe the perioperative stressors and physiologic responses to those stressors	OR
5. Demonstrate familiarity with concepts of hemodynamic parameters.	OR
6. Acquire the principles of fluid management and blood resuscitation and be able to apply those to the perioperative patient management.	OR
7. Evaluate, admit, and follow post-operative patients to the Post-Anesthesia Care Unit (PACU) and the Intensive Care Unit (ICU).	OR, PACU
8. Describe the role of the ICU.	PACU

9. Describe the diagnosis and management of common post-op complications such as post-operative MI, pneumonia, VTE, delirium and fever.	Medicine Consult Service
10. Perform a basic assessment of acute post-operative/procedural pain and develop an analgesic plan.	Acute Pain Service
11. Recognize and differentiate between acute, chronic, malignant and non-malignant pain.	Pain Clinic
12. Describe the principles of safe drug prescribing.	Didactics

Student Schedule

Student	Assignment			
	Week 1	Week 2	Week 3	Week 4
A	IMPACT-AM PACE-PM	OR Day 1: <i>Airway Management</i> Day 2: <i>Cardiac case</i> Day 3: <i>Complex General Anesthesia</i> Day 4: <i>Multiple cases with healthy patients</i>	Med consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i>	APS/Pain Clinic Day 1 <i>Introduction to the service outlining the goals of the rotation and assisting in selecting appropriate study materials.</i> Day 2 <i>PBLD related to chronic pain patient (example: post-laminectomy syndrome, CPRP, post herpetic neuralgia, diabetic neuropathy).</i> Day 3 <i>PBLD cancer pain</i> Day4 <i>Didactic teaching related to options for postoperative pain control (PO, IV, Neuroaxial, Peripheral Nerve Blocks). Guidelines for patients on anticoagulant therapy and challenges with narcotic dependant</i>

				<p><i>patients in postoperative setup.</i></p> <p><i>Day5 PBLD – Post operative pain controlled in various patient populations . (example: - Post thoracotomy surgery - Post major abdominal surgery - Post major joint replacement surgery)</i></p>
B	<p>PACE-AM IMPACT-PM</p>	<p>OR Day 1: <i>Airway Management</i> Day 2: <i>Cardiac case</i> Day 3: <i>Complex General Anesthesia</i> Day 4: <i>Multiple cases with healthy patients</i></p>	<p>Med Consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i></p>	<p>APS/Pain Clinic</p>
C	<p>Med Consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i></p>	<p>IMPACT-AM PACE-PM</p>	<p>APS/Pain Clinic Day 1 <i>Introduction to the service outlining the goals of the rotation and assisting in selecting appropriate study materials.</i></p>	<p>OR Day 1: <i>Airway Management</i> Day 2: <i>Cardiac case</i> Day 3: <i>Complex General Anesthesia</i> Day 4: <i>Multiple cases with healthy patients</i></p>

			<p>Day 2 <i>PBLD related to chronic pain patient (example: post-laminectomy syndrome, CPRP, post herpetic neuralgia, diabetic neuropathy).</i></p> <p>Day 3 <i>PBLD cancer pain</i></p> <p>Day4 <i>Didactic teaching related to options for postoperative pain control (PO, IV, Neuroaxial, Peripheral Nerve Blocks). Guidelines for patients on anticoagulant therapy and challenges with narcotic dependant patients in postoperative setup.</i></p> <p>Day5 <i>PBLD – Post operative pain controlled in various patient populations . (example: - Post thoracotomy</i></p>	
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			<p><i>surgery</i></p> <ul style="list-style-type: none"> - <i>Post major abdominal surgery</i> - <i>Post major joint replacement surgery</i> 	
D	<p>Med Consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i></p>	<p>IMPACT-AM PACE-PM</p>	<p>APS/Pain Clinic Day 1 <i>Introduction to the service outlining the goals of the rotation and assisting in selecting appropriate study materials.</i></p> <p>Day 2 <i>PBLD related to chronic pain patient (example: post-laminectomy syndrome, CPRP, post herpetic neuralgia, diabetic neuropathy).</i></p> <p>Day 3 <i>PBLD cancer pain</i></p> <p>Day4 <i>Didactic teaching related to options for postoperative pain control (PO, IV, Neuroaxial, Peripheral Nerve Blocks).</i></p>	<p>OR Day 1: <i>Airway Management</i> Day 2: <i>Cardiac case</i> Day 3: <i>Complex General Anesthesia</i> Day 4: <i>Multiple cases with healthy patients</i></p>

			<p><i>Guidelines for patients on anticoagulant therapy and challenges with narcotic dependant patients in postoperative setup.</i></p> <p><i>Day5 PBLD – Post operative pain controlled in various patient populations . (example: - Post thoracotomy surgery - Post major abdominal surgery - Post major joint replacement surgery</i></p>	
E	<p>OR Day 1: Airway Management Day 2: Cardiac case Day 3: Complex General Anesthesia Day 4: Multiple cases with healthy patients</p>	<p>Med Consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i></p>	<p>IMPACT-AM PACE-PM</p>	<p>Med Consult</p>
F	<p>OR Day 1: Airway Management Day 2: Cardiac case Day 3: Complex</p>	<p>Med Consult <i>Rotation on the Inpatient Medicine Consult</i></p>	<p>PACE-AM IMPACT-PM</p>	<p>Med Consult</p>

	<i>General Anesthesia Day 4: Multiple cases with healthy patients</i>	<i>Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i>		
G	APS/Pain Clinic	PACE-AM IMPACT-PM	OR Day 1: Airway Management Day 2: Cardiac case Day 3: Complex General Anesthesia Day 4: Multiple cases with healthy patients	IMPACT-AM PACE-PM
H	APS/Pain Clinic Day 1 <i>Introduction to the service outlining the goals of the rotation and assisting in selecting appropriate study materials.</i> Day 2 <i>PBLD related to chronic pain patient (example: post-laminectomy syndrome, CPRP, post herpetic neuralgia, diabetic neuropathy).</i> Day 3 <i>PBLD cancer pain</i> Day 4 <i>Didactic teaching related to options for</i>	OR Day 1: Airway Management Day 2: Cardiac case Day 3: Complex General Anesthesia Day 4: Multiple cases with healthy patients	Med Consult <i>Rotation on the Inpatient Medicine Consult Service, doing consults on patients requiring urgent surgery and on patients with post-operative complications</i>	PACE-AM IMPACT-PM

	<p><i>postoperative pain control (PO, IV, Neuroaxial, Peripheral Nerve Blocks). Guidelines for patients on anticoagulant therapy and challenges with narcotic dependant patients in postoperative setup.</i></p> <p><i>Day5 PBLD – Post operative pain controlled in various patient populations . (example: - Post thoracotomy surgery - Post major abdominal surgery - Post major joint replacement surgery</i></p>			
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Journal Club

- Every Tuesday from Noon to 1pm there will be a Journal Club
- Required readings are posted on the web portal

Seminars

- Every Thursday afternoon there will be seminars from 1-3pm
- Cases and Required Reading is posted on the Web Portal

Week	Day	Topics for Seminars	Speaker
1	Monday: Orientation from 7:30-10 am Tuesday: Journal Club Thursday: Seminars 1-3pm	1. The Preoperative Evaluation, medication management Lab Testing and principle of medical consultation 2. Cardiac Risk Assessment and Risk Reduction for non-cardiac Surgery	IMPACT IMPACT
2	Thursday: Seminars 1-3pm Friday: Mid-rotation Feedback session	1. Fluid Management 2. Transfusion Medicine 3. Hemodynamic monitoring and Pressor management	Anesthesia Anesthesia
3	Tuesday: Journal Club Thursday: Seminars 1-3pm	1. Case studies in Preventing Postoperative Complications (VTE, shortness of breath, delirium and Fever)	IMPACT
4	Tuesday: Journal Club	1. Case Studies in Acute Pain	Pain

	<p>Thursday: Seminars 1-3pm End of Rotation Meeting 3-5pm</p>	<p>Management:</p> <ul style="list-style-type: none"> • Patient on Chronic Opiates now with Post-op Pain • Management of acute post-op Pain <p>2. Case Studies in Chronic Pain Management</p> <ul style="list-style-type: none"> • Management of pain in patient with bony pain from cancer • Management of chronic low back pain in a depressed patient 	<p>Pain</p>
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Textbook

1. Cohn, S, Smetana, G and Weed, H. eds. Just the Facts in Perioperative Medicine, 2006. McGraw-Hill Professional; 1st edition . Available in the Library.

Student Assessment

The student assessment package will incorporate multiple components into the student's portfolio to provide a thorough and well rounded evaluation.

1. Patient case log – to ensure adequate breadth and depth of patient encounters
2. Procedure log – to assure adequate technical skill is developed during the rotation
3. Assessment by Faculty that will be done in the following areas:

Clinical Assessment Template

Competence	Targeted Areas for Improvement	Areas of Strength
<u>Patient Care in the IMPACT Center/PACE Clinic/Consult Service</u>		
<ul style="list-style-type: none"> • Preoperative Evaluation <i>(outlines relevant history, medications, functional class, surgical risk, cardiac risk, physical exam and makes appropriate recommendations for perioperative management)</i> 		
<ul style="list-style-type: none"> • Preanesthesia Assessment <i>(outlines relevant history, urgency of procedure, surgical risk, develops an anesthesia plan)</i> 		
<ul style="list-style-type: none"> • Medical Consultation (Inpatient) <i>(understands the consulting service's question. Reviews and documents the pertinent history, tests, physical exam and then offers recommendations for further management of the problem)</i> 		
Patient Care in the OR/PACU/Acute Pain		
<ul style="list-style-type: none"> • Performs Airway Management <i>(mask ventilation followed by placement of laryngeal mask airway (LMA) or endotracheal (ET) tube and confirms proper placement, ventilation and oxygenation)</i> 		
<ul style="list-style-type: none"> • Performs Hemodynamic monitoring <i>(Demonstrates the ability to measure blood pressure, heart rate, respiration, ventilation and oxygen saturation in a clinical setting and is able to interpret the lab values)</i> 		

<ul style="list-style-type: none"> • Fluid Management <i>(Recognizes the need for volume resuscitation and can perform the technical elements of rapid fluid administration, including evaluation of IV access, fluid warming devices, selecting the correct fluid, pressurized infusion and clinical information to guide the resuscitation)</i> 		
<ul style="list-style-type: none"> • Principles of Transfusion Management <i>(In OR or PACU when blood loss is anticipated, the student recognizes the indications for transfusion, confirms the availability of correct blood products, correctly checks the unit of blood against patient identification, assembles a blood administration tubing, completes the transfusion and describes presence or absence of signs of transfusion reaction)</i> 		
<ul style="list-style-type: none"> • PACU assessment (Admits patient to the PACU, performs initial assessment of vital signs, verification of homeostasis or instability, corrects interventions if needed, reports of the surgical procedure and plan for PACU care) 		
<ul style="list-style-type: none"> • Acute Pain Assessment (When assigned to PACU or the acute pain service, the student is asked to evaluate a patient experiencing acute pain service, the student is asked to evaluate a patient experiencing acute postoperative pain. The student is expected to measure the severity of the pain, describe the management options, select an option acceptable to the patient and initiate treatment with assistance) 		
Chronic Pain Clinic		
<ul style="list-style-type: none"> • Chronic Pain assessment (Is able to interview patient with chronic pain. The student is able to describe the pain, contributing comorbidities, exacerbating features, appropriate diagnostic steps and potential management) 		
Medical Knowledge		
<ul style="list-style-type: none"> • Demonstrates initiative in acquiring and sharing knowledge 		

<ul style="list-style-type: none"> • Applies the following knowledge in clinical settings: <ul style="list-style-type: none"> - Pathophysiology - Interpretation of diagnostic testing - Risks, benefits, complications of Testing - Therapies to reduce perioperative risk 		
<u>Communication Skills</u>		
<ul style="list-style-type: none"> • Oral case presentations 		
<ul style="list-style-type: none"> • Written case presentations 		
<ul style="list-style-type: none"> • Communication with patient and family 		
<ul style="list-style-type: none"> • Communication with other professionals 		
<ul style="list-style-type: none"> • Listening skills (including feedback) 		
<u>Professionalism</u>		
<ul style="list-style-type: none"> • Interactions with medical team (doctors, nurses, others) 		
<ul style="list-style-type: none"> • Interactions with patients and patient's families 		
<ul style="list-style-type: none"> • Dependability (timeliness, completing assignments) 		
<ul style="list-style-type: none"> • Honesty, integrity, ethical behavior 		
<ul style="list-style-type: none"> • Compassion / Empathy 		
<ul style="list-style-type: none"> • Incorporates feedback into practice 		
<ul style="list-style-type: none"> • Assumes responsibility for learning 		
<u>Practice-based Learning</u>		
<ul style="list-style-type: none"> • Identifies and addresses areas for improvement • Searches medical literature • Appraises scientific evidence • Awareness of patient quality and safety considerations 		
<u>Systems-based Practice</u>		
<ul style="list-style-type: none"> • Transitions of care <ul style="list-style-type: none"> – Communicates appropriately with patients outside doctors – Communicates with the team or physician requesting consultation 		
<u>Research</u>		
<ul style="list-style-type: none"> • Applies basic principles of the scientific method to formulate a hypothesis in the context of the patient receiving perioperative care 		
<ul style="list-style-type: none"> • Demonstrates habit of generating research questions to test hypotheses in perioperative clinical practice 		
<ul style="list-style-type: none"> • Analyzes research literature relevant to the perioperative patient 		

