

## CLERKSHIP CURRICULUM IN ANESTHESIOLOGY

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### AIM

To introduce clerks to clinical anaesthesia covering: peri-operative assessment and optimization, monitoring techniques, management of acute medical care issues including resuscitation, acute pain, and application of basic science to clinical problems, acquisition of good basic airway skills, placement of intravenous cannulae, and experience in more advanced airway management techniques.

To benefit from the rotation clerks are expected to have read the "Anaesthesiology Clerkship Rotation Handbook" before starting. Additional reading during the rotation using the "Anaesthesia for medical students" textbook provided is highly recommended. Clerks should also supplement reading by *QUESTIONING THE FACULTY TUTORS*, observation, and clinical practice. This is one of the few times during clerkship when you are one-on-one with a member of staff all day every day; take advantage of it. Clerks are asked to ensure that their faculty tutor(s) record and deliver to them, for feedback and safekeeping, their evaluation sheet each day or evening. Each clerk will collect and hold all these evaluation sheets, which are to be given to the anaesthesia undergraduate secretary at the end of the rotation.

### SCHEDULE

Clinical assignment at HDH or KGH Hospital assignments (KGH or HDH) for the first day of the Anesthesia rotation by checking the anesthesia website [www.anesthesia.ca](http://www.anesthesia.ca) Click on Education, Click on Undergraduate, Click on "Clerk Weekly Schedule" or alternatively enquiring at the Department of Anesthesia office (KGH Victory 2, or 548- 7827) by the Friday before the rotation commences.

On the first day of the rotation the clerk will report at 07:30 hours to the OR at their assigned hospital. **At HDH they will report to Anaesthesia OR manager**, and at **KGH they will report to the Anaesthesia OR manager (tel: 7071)**. Note that the KGH and HDH may have different statutory or union generated holidays. Please call the department office at 7827 to confirm your allocation for that day on the Friday beforehand.

Clerks will be assigned during all or part of each day to the OR, Obstetrical Unit, or acute/chronic pain services for a variety of experience. Clerk assignments within the OR is coordinated by the Anesthesia Resident Manager. We aim to avoid assigning a clerk to a room where there is also a resident. However occasionally this is unavoidable and every effort is made to try and allocate a list where the clerk can maximise their experience. Please address any concerns with list allocation to the Anesthesia Resident Manager or failing this, the anaesthesia undergraduate secretary. The clerk is usually expected to complete the day in the assigned location. However, this may be altered if better learning opportunities present. If a list finishes earlier than expected the clerk will be reassigned to another list. If you appear to be unassigned to a list at either hospital contact the 'Anaesthesia Operating Room Manager' (tel: 7071) or Anaesthesia departmental office (KGH 7827) for clarification. You will be assigned somewhere each day!

§ Clerks are required to be in their assigned operating room each morning one half hour before scheduled (0800) start time. The operating rooms start at 08.30 on Wednesdays due to Grand Rounds.

§ Rounds:  
**Wednesday:** Grand Rounds, 07:00 in Richardson Amphitheatre (cancelled during the summer)

**Friday:** Clinical Case Management Rounds, 07:00 at KGH – *see Rounds and Conferences Notice posted on the Departmental bulletin board for location as this changes regularly.*

**\*\*Attendance at Grand Rounds and Case Management rounds is mandatory. Attendance records will be taken\*\***

§ **Seminar lectures as part of the Periop lecture series**  
Attendance will be taken. Students missing any of these sessions in their block must make arrangements to make up the session.

- Preoperative Assessment
- Acute Pain Service/ Post operative pain management
- Airway Management and Ventilation Strategies

§ **Call:** clerks will spend **one evening** (evaluations required) with the anesthesia team on-call to see the problems associated with "emergency anesthesia". Clerks will be assigned to a specific day. Clerks should report to the staff on call (tel: 7071). Clerk's evening call ends **before** 2400 to allow return to work the next day.

§ **Clerks must evaluate their patients preoperatively and record that evaluation on each patient's anaesthetic record sheet. Clerks will be evaluated on their assessment of the patients and asked to formulate an anaesthetic plan.**

You will be assigned to your OR room the day beforehand. The OR schedule is available on the afternoon before. Please look at this to find out which list you will be doing and what type of cases are involved. As well as reviewing the patient's record it is recommended that you read up about any underlying medical conditions and how these and the type of surgery may affect management.

'Same Day Admission' and 'Outpatient' charts are available for review in the "Same Day Area" on the afternoon prior to scheduled anesthesia. The "Same Day Area" is located on the second floor between the operating suite and Victory 2 Anaesthesia department. These patients will again be assessed immediately prior to their surgery by the anaesthesia staff and/or clerk. The clerk should begin to complete the anaesthetic record found in the patients chart the evening before.

Clerks are also expected to assess any 'in-patients'. These will be identifiable as either TBA or have a designated floor beside their name on the OR list.

**N.B. The clerk must assess all patients before the OR list starts. It is unprofessional behaviour to arrive in the operating room with no knowledge of the patient and expect to be allowed to have active participation in their care. The staff may refuse to let you participate actively in the case if you have not assessed the patient beforehand.**

§ **Anesthesiology Perioperative Worksheet** - forms included in your package  
One form must be completed for each KGH OR day on a patient of your choice on the list you are assigned to the evening prior. Your preceptor for that day will review this with you and may ask you some questions.

## **OBJECTIVES**

### **1. Preanesthetic assessment**

- a) Perform several preanesthetic assessments including:
  - Obtain and record pertinent history in an efficient and compassionate manner
  - Physically assess airway, cardiovascular system, respiratory system.
  - Review and interpret laboratory data
  - Assign appropriate ASA classification
- b) Discuss how the following factors impact in the perioperative period:
  - Age
  - Surgery
  - CVS: coronary insufficiency, hypertension, myocardial failure, dysrhythmias
  - Resp: known/suspected difficult intubation, upper/lower resp. infections, asthma, COPD
  - CNS: increased ICP

GIT: factors affecting pulmonary aspiration risk  
Hematological: anemias, coagulopathies  
Personal/family history of anesthetic reactions; malignant hyperthermia, succinylcholine apnea, awareness, postoperative nausea and vomiting  
Lifestyle: obesity, smoking, alcohol, street drugs.

- c) Discuss medication history:
  - Which drugs to discontinue and why (risk of rebound phenomena with  $\beta$  blockers)
  - Chronic pain medications
- d) Demonstrate knowledge of objectives for premedication including:
  - Drugs for anxiety, amnesia, analgesia, sedation, reducing gastric volume and acidity
  - NPO guidelines
- e) The clerk will be expected to devise a **basic anaesthetic management plan**

## 2. Operating Room

- a) Demonstrate knowledge and observe induction of anesthesia including
  - Identify and give the advantages and disadvantages of intravenous agents, inhalation agents, neuromuscular blocking agents
- b) Demonstrate correct airway and ventilatory management by:
  - Knowledge of basic upper airway anatomy
  - Risks/benefits of mask ventilation vs endotracheal intubation vs laryngeal mask airway
  - Identify and overcome upper airway obstruction with mask ventilation using:
    - Various masks
    - Jaw thrust
    - Nasopharyngeal airway
    - Oropharyngeal airway
  - Practice endotracheal intubation
  - Ventilatory requirements of an adult
  - The effects of anesthesia and surgery on oxygenation and ventilation
- c) Understand the principles and practice of routine intraoperative monitoring by:
  - Explain and demonstrate lead placement and selection to detect dysrhythmias and ischemia
  - Interpretation and potential errors in pulse oximetry
  - Interpretation of capnography
- d) Prescribe and conduct appropriate intraoperative fluid and electrolyte therapy by:
  - Identify common sites for venous access including indications/ contraindications
  - Demonstrate skill at establishing intravenous access by:
    - Sterile technique and universal precautions
    - Successfully insert several peripheral catheters ideally of different sizes
    - Protect the site and immobilize the catheter

Predict how preoperative conditions alter perioperative fluid requirements for:

- NPO
- Bowel prep
- NG suction
- Fever

Discuss the intraoperative considerations of fluid replacement for:

- Blood loss
- Third space losses
- Temperature

Assess volume status and interpret data via the following monitors:

- Examination of the patient
- Pulse and blood pressure measurement (NIBP/ arterial lines)
- Urine output
- CVP
- PCWP

Discuss the indications, risks, benefits and complications of crystalloids, colloids, blood products including:

- Blood volume

Oxygen carrying capacity  
Coagulation

Discuss methods of recognizing and treating perioperatively:

Hypoxia  
Hypercarbia  
Hypertension  
Endobronchial intubation  
Esophageal intubation

- e) Identify several position related injuries that a patient may sustain whilst unconscious.
- f) Describe the drugs used for resuscitation, their indications, doses related to body size, and side effects.

### **3. Regional Anesthesia**

- a) Demonstrate knowledge of local anesthetic pharmacology appropriate to the practice of general medicine by:

Listing commonly used local anesthetics for:

Topical use  
Local infiltration  
Intravenous blocks (biers blocks)  
Peripheral nerve blocks  
Spinal anesthesia  
Epidural analgesia/anesthesia

Know the acceptable doses of at least two local anesthetic agents used for peripheral nerve blocks and epidural anesthesia

Describe and identify signs of impending local anesthetic toxicity

Describe the medical management of local anesthetic toxicity including preventative measures

Awareness of additives used with local anesthetic preparations, their purpose and toxicity  
Risks, benefits and contraindications to spinal and epidural anesthesia

### **4. Ambulatory Anesthesia**

- a) Demonstrate knowledge of the types of procedures and patients appropriate for ambulatory surgery

- b) Assess the ambulatory patient with respect to

ASA classification  
NPO status  
Appropriate lab work  
Nausea and vomiting prophylaxis  
Pain management  
Discharge criteria

### **5. Postoperative Pain Management**

- a) Demonstrate knowledge of the different types of pain management including the advantages, disadvantages and monitoring required for:

PCA  
Epidural catheters  
PRN medications  
PO medications

- b) Knowledge of assessment of postoperative pain via

Pain scales  
Visual analogue scales

### **6. Obstetrical Anaesthesia.**

- a) Demonstrate knowledge of:

Physiological changes of pregnancy and their implications for anaesthesia

Regional anaesthesia using local anesthetic and/or opioids for analgesia including the indications, contraindications, effects, problems, and relevant sensory pathways.

The indications, contraindications, effects, and problems of general anaesthesia in the obstetrical population  
Other methods of pain control in labour

**7. Attitudes** of the clerk are assessed on a daily basis and include:

- a) Interaction with patients (and their families) with regards to respect, compassion and empathy
- b) Politeness and respect for other health care professionals
- c) Punctuality, reliability and the ability to take initiative and responsibility where appropriate
- d) Ability to work effectively as part of a team
- e) Motivation towards patient assessment, self directed study and maximising clinical exp

### **EVALUATION of CLERKS**

Daily evaluation by **both direct observation and by oral questioning** will be recorded each day. Completed daily evaluation forms are to be obtained by the clerk **each day** and all evaluations held by the clerk for presentation to the undergraduate secretary at the end of the rotation. You also need to complete a logbook outlining your daily experience. You will be tested on Anesthesiology at the end of each block at the Skills Lab on 92 Barrie Street. The end of rotation evaluation form will be a cumulative taken from the daily evaluations and examination result. The logbook, needs to give a quantitative aspect to the daily evaluations.

### **EVALUATION of FACULTY/ PROGRAM**

Clerks in this program are expected to **evaluate Instruction for four days online while your memories are fresh**. Clerks are expected to complete daily logbooks of their clinical caseloads each day. This will enable clerks to have more input into the types of cases they are assigned to in the second week if they happen to have had poor clinical exposure during their first week. We don't know how things have been unless you tell us. This will assist us to correct problems quickly (if we are told quickly) thus improving scheduling and instruction **during** your rotation. A final global assessment form is to be completed at the end of the rotation.

### **CRITERIA FOR EVALUATION OF CLERKS' KNOWLEDGE & PERFORMANCE**

#### **Level of performance expected is that reasonable for the duration of the rotation**

#### **Fails to meet:**

Lacks basic knowledge. Demonstrates difficulty in applying knowledge to the principles of peri-operative medicine. Has difficulty in analyzing patient data and problem solving. Preoperative assessment of patients is inaccurate or severely deficient of important information. Physical examination, in particular airway examination, is poorly performed resulting in inaccurate management. Not dependable, reliable or punctual. Lacks ability to work in a team. Demonstrates a disrespectful attitude to patients or staff. Does less than prescribed work. Lacks insight into own limitations. Does not accept constructive criticism well.

#### **Marginally meets:**

Superficial knowledge base with some difficulty solving common clinical problems. Assessment of patients is superficial and unfocused with some information missing and incomplete physical findings. Has some difficulty with judgement and assessing emergency situations appropriately. Technical skills sometimes lacking in basic technique. Demonstrates inconsistent communication and interpersonal skills, is a poor team player, cannot always be depended and needs occasional reminders. Has inconsistent awareness of own limitations and has difficulty seeking feedback and taking advice well.

**Meets objective:**

Sound basic knowledge of common medical conditions. Assessment of patients preoperatively is accurate, relatively complete and presented systematically. Performs complete physical examination well and able to perform a competent airway assessment. Can usually identify those patients who may be difficult to either ventilate or intubate. Problem solving skills are ordered and systematic towards simple issues. Demonstrates a good approach towards more complex issues. The clerk is reliable and punctual. Work successfully within the team environment. Demonstrates good rapport with patients, their families and staff in general. Responsible, takes initiative and knows own limitations. Accepts constructive criticism well.

**Final Rotation Mark: Clinical Performance 75% Examination 25%  
(Pass/Fail only)**

**EQUIPMENT**

**Clerks are expected to bring their own stethoscopes.**

**REQUIRED READING**

Patterson L.J. (2004) Anaesthesiology Clerkship Rotation Handbook: notes covering the course objectives are issued to all clerks.

**REFERENCE**

Anaesthesia for medical students. Pat Sullivan 1999 Edition (OUT OF PRINT)

Each clerk will be offered loan of the Handbook for reference if it is available. Chapters 16 and 17 in the text will be made available to students if a text is not available for signing out. These chapters must be read prior to assigned day of Pain.

**END OF BLOCK EXAMINATION**

Eligibility to sit the examination requires that the handbook, all evaluation slips, logbook and perioperative worksheets be returned to the department first. **Marks for the rotation will only be issued after the clerk has returned all required paperwork.** If a book is lost, the clerk will be invoiced to cover replacement cost.

Department of Anesthesiology  
Queen's University  
Clerkship Clinical Evaluation

Clerk \_\_\_\_\_ Date \_\_\_\_\_

Faculty \_\_\_\_\_ List \_\_\_\_\_

	Fails to Meet*	Marginally Meets*	Meets Objective	N/A
Knowledge base	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application of knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Motivation to learn	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
History taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical exam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Investigations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resource Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Team functioning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relationship with patient and family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insight/self care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ethical behavior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This student exhibited OUTSTANDING performance in the following area(s)

\_\_\_\_\_  
\_\_\_\_\_

\*see over for comments

Attempts

Successful

**Airway skill:**

facemask ventilation \_\_\_\_\_

intubation \_\_\_\_\_

alternative airway:  
(list type) \_\_\_\_\_

Intravenous cannulation \_\_\_\_\_

**Global Performance (circle one)**

Fails to Meet Expectations      Marginally Meets      Meets Expectations      Exceeds Expectations

**\*Comments**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Staff Signature \_\_\_\_\_