ANESTHESIA & INTENSIVE CARE ROTATION CHECKLIST

For 4th year medical students

Zaid Sameer Alkhateeb

ANESTHESIA AND INTENSIVE CARE DEPARTMENT - JUH

INTRODUCTION

During your rotation at anesthesia and intensive care department you will be divided in small groups and assigned to attend various places where anesthetists are found doing their job, including operation rooms, preoperative assessment clinic, intensive care unit, holding room, recovery room, and many other peripheral sites where procedures are done.

The main aim of your attendance is to see most of the possible **anesthesia modalities** (General, neuro-axial, regional, sedation) in reality, and how to deal with all these types pre-operatively, intra-operatively and post-operatively.

Remember that the main purpose of this part of your rotation is the exposure to many cases and situations as much as you can using **observer-ship** as your cornerstone method in the learning process. You must see these cases and these situations observing many types of surgical procedures from an anesthetic point of view not from surgical perspective.

Other learning methods in our department you must be ready for -in addition to observation- are **teaching rounds, discussion groups, seminars and hands-on experience.** You must be enthusiastic and prepared by knowledge and observation to have opportunity for hands-on trial. As a medical student you are allowed to limited interventions at your level only under direct supervision.

Remember also that there is **no spoon-feeding** in clinical years, you must use all your senses to catch the knowledge and skills.

In this file we made a **checklist or a logbook** that you can use for self-assessment during your rotation at our department, it contains the minimum requirements but also the most important that you must notice and learn about during your rotation, and it guarantees to you inshallah the best outcome from your attendance.

-Read this checklist at least once before starting of your rotation to be well oriented.
-Tick everything you see or learn about either in JUH or by self-learning.
-You can't finish all of these point in one day or one week, it is a progressive process.
-This is not an enough material for your exams, but it will guide and help you inshallah.

Good luck to all of you.

ANESTHESIA CHECKLIST

In any procedure or surgical operation you attend at our department during this rotation you have to know these points:	☐ To know about the patient's history	NOTES
	☐ To know the name of the procedure/surgical operation	This your daily responsibility. Although procedures and operations may look alike, but you are responsible to spot the differences.
	☐ To know which type/modality of anesthesia is being used and why	
	☐ To know if there is any special techniques / considerations regrading this type of surgery or the status of the patient	

You must see and observe how anesthesia team deals with patients in all of these sitting to have the maximum exposure to variable aspects of our practice, every day you must participate in one different setting as mentioned:	☐ **Pre-operative phase/setting:** Pre-operative assessment or evaluation either in: 1-Anesthesia clinic 2-Wards for in-patients 3-Holding area	NOTES
	☐ **Intra-operative phase/setting:** You must witness and observe all possible types of anesthesia in all of these stages: 1-Induction phase	You can't Attend or witness all of these phases and settings in one day, this is why you are assigned to different place everyday, including holding room, recovery room and clinic,.
	☐ 2- Maintenance and monitoring phase	
	☐ 3-Emergence or recovery phase	
	☐ **Post-operative phase/setting:** Transport from the operating room to either PACU or ICU 1-Post anesthesia recovery room (PACU) duties and responsibilities	
	☐ 2-Discharge of the patient from PACU to the wards (according to Aldrete score)	
	☐ **Critical care setting:** To attend a teaching round and bed-side discussion regarding critically ill patients under the care of anesthesia team at our intensive care unit (ICU) mirror	

Anesthesia techniques or modalities you may see:	☐ General anesthesia	NOTES
	☐ Neuro-axial anesthesia: Spinal anesthesia	During local analgesia procedures, you will find the surgical team alone without anesthesia team. So it is not required
	☐ Epidural anesthesia	
	☐ Sedation	
	☐ Regional anesthesia	

ANESTHESIA EQUIPMENT'S:

For each equipment listed below, you have to know its shape, parts and the function of each part, sizes and which to choose, technique and steps to use, indications for usage, if there is any contraindication

Indications and contraindications can be considered as advantages and disadvantages of this equipment or technique over another equipment

Put a tick if you have seen or used this equipment

Non-invasive airway devices:	☐ **Oral airway** (=oropharyngeal airway or Guedel pattern airway)	**NOTES**
	☐ **Nasopharyngeal airway**	

Supra-glottic airway devices:	☐ **laryngeal mask (LMA)** Many types: classical/standard proSeal supreme	**NOTES**
	☐ **Intubating laryngeal mask**	
	☐ **i - gel airway**	
	☐ **The Combi-tube** (=esophageal tracheal combi-tube)	

Infra- glottic airway devices:	**Classical tracheal tubes (oral endotracheal tube)**	**NOTES**
	☐ **Oral cuffed ETT**	
	☐ **Oral non-cuffed ETT**	
	RAE Preformed tubes	
	☐ **North RAE (N shaped)**	
	☐ **South RAE (S shaped)**	
	☐ **Nasotracheal tubes (=nasal tubes)**	
	☐ **Double lumen tubes**	
	☐ **Flixo-metalic tubes**	
	☐ **NIM tubes (Nerve Integrity Monitoring)**	
	☐ **Tracheostomy tubes**	
	☐ **Cricothyroidotomy**	
	☐ **Cuff pressure checking device**	It is not an airway device But maybe used with them

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Intubation aid devices:	☐ **Direct Laryngoscopes** Many types including Macintoch, Miller, Polio...etc.	**NOTES**
	☐ **Video laryngoscope (=Glidescope)**	
	☐ **Flexible fiber-optic endoscopes for intubation**	
	☐ **Bougies**	
	☐ **Stylets**	
	☐ **Magill's forceps**	

Oxygen delivery devices :	☐ **Anesthetic face-mask** (= sealing face mask)	**NOTES**
	☐ **Simple (standard) face mask**	
	☐ **Nasal cannula**	
	☐ **Tracheostomy mask**	
	☐ **Non-rebreather mask** (=Face-mask with reservoir bag)	
	☐ **Venturi device**	
	☐ **High flow nasal cannula (HFNC)**	
	☐ **CPAP**	
	☐ **BiPAP**	

Manual resuscitation devices:	☐ **self-inflating bag (AMBU BAG)** Different sizes: Adult, pediatric, infants	**NOTES**

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Neuro-axial anesthesia:	**Spinal anesthesia needles:** ☐ Pencil point needle ☐ Quinkie needle ☐ Introducer	**NOTES** You should know the differences and the similarities between spinal anesthesia and epidural analgesia in indications, contraindications, equipment used, medications, anatomy, steps of each procedure and common complications.
	Epidural analgesia kit ☐ Touhy needle ☐ Loss of resistance syringe ☐ Catheter ☐ Filter ☐ Crocodile	
	☐ Combined spinal epidural kit	

Special medication administration devices:	**Devices for total intravenous anesthesia (TIVA)** ☐ Syringe driver (pump)	**NOTES**
	☐ Patient controlled analgesia (PCA)	

MEDICAL SUCTION:	☐ Suction Catheter	**NOTES**
	☐ Suction bottle	

Warming devices:	☐ Forced air warming device (Bair Hugger with its blanket)	**NOTES**
	☐ Fluid warmers (blood warmer)	

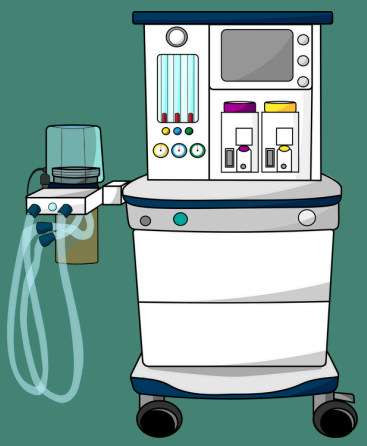
Special maneuvers / techniques /devices	☐ Oro-gastric tube (OGT) / Naso-gastric tube (NGT)	
	☐ throat pack / Mouth gauzes	
	☐ Surgical tourniquet	

ANESTHESIA MACHINE:

Anesthesia Machine connections:

	NOTES
☐ Medical gas cylinders	
☐ Pipelines (piped medical gas supply)	
☐ Medical vacuum and suction	
☐ Scavenging system	
The mapleson circuits: Mapleson A Mapleson B Mapleson C ☐ Mapleson D (Bain system) Mapleson E ☐ Mapleson F (Jackson-Rees modification)	

Anesthesia Machine parts:



	NOTES
☐ Medical gas supply High pressure system (connected to pipelines and cylinders) ☐ Low pressure system (needle valve connected to flowmwters)	
Vaporizers of the anesthetic gases ☐ Modern variable bypass vaporizers ☐ Desflurane Tec-6 vaporizer	
The circle system ☐ Fresh gas inlet ☐ Reservoir bag ☐ One-way valve for inspiratory limb ☐ One-way valve for expiratory limb ☐ Y-piece connector from the one-way valves to the patient ☐ Adjustable pressure limiting valve (APL valve) ☐ Carbon dioxide absorbent (Soda lime canister) ☐ Corrugated tubes (kink-resistant) to connect these components to one other and the patient	
☐ Bellows (bag in the bottle ventilator)	
☐ Oxygen flush	
☐ Needle valve (of medical gases) + control knob	
☐ Flowmeters + bobbins	
☐ Common gas outlet	
☐ Pressure limiting valves and pressure gauges	
☐ Knob to alternate between circle system and common gas outlet (circuit system)	
☐ Knob to alternate between spontaneous (bag-mask) and mechanical ventilation	
☐ Auxiliary oxygen outlet	

MONITORING:

Physiological monitoring:	☐ **ECG** 3 ECG leads are connected to every patient to give you a wave + heart rate reading (appears green on the screen)	**NOTES**
	☐ **Blood pressure** (A pressure cuff is connected to patient to give a NON INVASIVE BP reading	
	☐ **Oxygen saturation (SPO2) :** A pulse oximeter device is connected to patient to give a reading of oxygen saturation, a reading of pulse (HR) and a wave of this pulse. (appears blue on the screen)	
	☐ **Temperature:** A temperature probe is connected to patient either esophageally or transdermally...etc.	

GASES MONITORING:	**CAPNOGRAPHY (SAMPLING AND ANALYSIS)** ☐ **Main stream capnograph** ☐ **side stream capnograph** ☐ **colorimetric capnograph**	**NOTES** You should know the normal capnography wave and differentials of abnormal waves, shape of these devices, normal and abnormal End-tidal CO2.

CARDIAC OUTPUT MONITORING	☐ **ARTERIAL LINE** give an INVASIVE BP reading and a wave of this BP (appears in red on the screen)	**NOTES**
	☐ **CENTRAL VENOUS CATHETER**	

DEPTH OF ANESTHESIA AND NEUROPHYSIOLOGY MONITORING:	☐ **Nerve stimulator**	**NOTES** NIM is not used by anesthesia team, it is used by surgical teams in various neurosurgical, spine and thyroid procedures but it has an impact on anesthesia
	☐ **Nerve Integrity Monitoring (NIM)**	
	☐ **EEG**	
	☐ **Bispectral index (BIS)**	

Patient body's monitoring (things to be checked intraoperatively related to the safety of body parts)	☐ **Position** any **pressure points** must be checked regularly in relation to patient's position	**NOTES** You should know common positions of surgical operations, names and indications.
	☐ **Eyes padding (Eyes tapes)** also eyes lubricants maybe used	

ANESTHESIA DRUGS AND ANESTHESIA-RELATED DRUGS THAT ARE ROUTINELY USED IN OUR DEPARTMENT:

You are not limited to these drugs, you should instead study every single information mentioned in your theoretical lectures, but at least know these drugs with their clinical implementation.

Anesthetic drugs

IV anesthetics & sedative agents:

- [ ] Propofol
- [ ] Ketamine
- [ ] Medazolam
- [ ] Dexmedetomidine (Precedex)

Inhalational (volatile) anesthetic agents:

- [ ] Sevoflurane
- [ ] Isoflurane
- [ ] Desflurane
- [ ] N2O

NOTES

N2O isn't used any more at JUH

Opioids

- [ ] Fentanyl
- [ ] Morphine
- [ ] Remifentanil

NOTES

Muscle relaxants:

- [ ] Succinylcholine (=Scoline /Suxamethonium)
- [ ] Cisatracurium
- [ ] Rocuronium

NOTES

Medications in the anesthesia trolly:

- [ ] Water for injection
- [ ] Atropine
- [ ] Ephedrine
- [ ] Neostigmine
- [ ] Lidocaine (xylocaine)
- [ ] Bupivacaine (Marcaine)
- [ ] Dexamethasone
- [ ] Hydrocortisone
- [ ] Naloxone
- [ ] Chlorpheniramine (Allerfin)
- [ ] Metoclopramide (Clopram)
- [ ] Lasix (furosemide)
- [ ] Metoprolol

NOTES

Lidocaine is found in IV form, lidocaine gel, lidocaine spray.

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Inotropes and Vasopressors (cardiovascular supports)	☐ **Adrenaline (epinephrine)** ☐ **Noreadrenaline (norepinephrine)** ☐ **Debutamine**	**NOTES** Adrenaline is found also in anesthesia trolly (readily available)

Miscellaneous drugs:	☐ **Sugammadex** ☐ **Ondansetron (zofran)** ☐ **Paracetamol (perphalgan)** ☐ **Pabal** ☐ **Syntocin (oxytocin)** ☐ **Ventolin**	**NOTES**

ANESTHESIA TROLLY

Anesthesia trolly contents
(frequently used disposable equipment)

☐ **1st drawer contents :**
medications as mentioned above

2nd drawer contents :
- ☐ **alcohol swabs**
- ☐ **Cannula cover**
- ☐ **cannula dressing (Tegaderm)**
- ☐ **3-way stop cock**
- ☐ **Insulin needle**
- ☐ **Spinal kit**
- ☐ **Regional anesthesia needle (=Peripheral Nerve Block Needles)**
- ☐ **Arterial line kit**
  Safety arterial cannula
  guide wire cannulation (seldinger technique)
- ☐ **IV extension**

3rd drawer contents :
- ☐ **syringes (different sizes)**
- ☐ **IV cannulas (various gauges)**

4th drawer contents :
- ☐ **IV giving set**
- ☐ **Blood giving set**
- ☐ **Orogastric tubes (OGT)**

☐ **5th drawer contents :**
Air way devices (LMA, ETT)

NOTES

On the anesthesia trolly we have labels for the commonly used medications to be put on syringes with doses written on it

please don't memorize, these are just mentioned to be familiar with our practice.

THE MUST KNOW ANESTHESIA ENTITIES:

You can't go through anesthesia rotation without learning about these clinical subjects even if not mentioned in your theoretical lectures, most of them are complications related to anesthesia :

common anesthetic complications:		NOTES
	☐ **Intraoperative awareness**	
	☐ **Post dural puncture headache (PDPH)**	
	☐ **Scoline apnea**	
	☐ **Malignant hyperthermia**	
	☐ **Delayed recovery**	
	☐ **Laryngeal spasm / bronchial spasm**	
	☐ **Anaphylaxis / allergic reaction**	
	☐ **Difficult intubation Vs. Difficult ventilation Vs. Failed intubation**	
	☐ **Total spinal anesthesia**	

Very important classifications and scores to know in anesthesia:		NOTES
	☐ **The Mallampati score**	
	☐ **ASA classification** (=The ASA physical status classification system)	
	☐ **Laryngoscopic view grades** (=Cormack–Lehane classification system)	
	☐ **The Aldrete score**	