5. Rapid Sequence Intubation/Airway Algorithm

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.

Preparation

Identify Predictors of Difficult Intubation (LEMON)

- Look for external markers of difficulty of BVM and Intubation
- Evaluate the **3-3-2 rule**
- **M**allampati score **≥ 3**
- **O**bstruction/**O**besity
- Reduced **N**eck Mobility

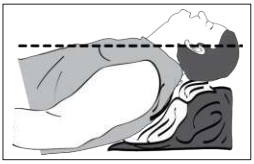
If a difficult airway is predicted, **IMMEDIATELY** consult a clinician experienced in airway management and intubation before proceeding.

MALE MESS

- **M**ask
- **A**irways (oral and nasal)
- **L**aryngoscopes, **L**aryngeal Mask Airway (LMA)
- **E**ndotracheal tubes – **Adult** Males 8F, Females 7.5F**; Child >1 year** (Age/4) + (4(uncuffed) or 3.5(cuffed))
- **M**onitoring (pulse oximetry, ECG, capnography), **M**agill Forceps
- **E**mergency drugs/trolley
- **S**elf-inflating bag valve resuscitator;
- **S**uction, **S**tylet, **Bougie**
- Plentiful oxygen supply

Pre-oxygenation

- **Attach oxygen via nasal prongs. Turn up to MAXIMUM if patient is unconscious or after sedation. Keep this for the entire intubation process.**
- **Spontaneously breathing patient** – Position patient as below and allow **at least 5 mins** of spontaneous breathing with a tight-fitting **non-rebreather facemask at MAXIMUM** and continue until the patient stops breathing after sedation/paralysis: **Avoid positive pressure ventilation if possible**
- **Patient not breathing or not breathing adequately**– Use a Bag-Valve-Mask (BVM) with a reservoir and O_2 at 15L/min to provide **1 breath every 6 seconds** (synchronized to the patient's breaths) until you can achieve and sustain the highest possible SpO_2



Position the patient

Ensure you have **360º acccess to the patient**

- **Belt/Belly Height** – Head at or just above belt/belly level
- **HoP up** – Head of Patient up to Head of Bed
- **HoB up** – Head of Bed up **30º**; Reverse trendelenburg in High BMI, Late Pregnancy, Spinal Immobilisation
- **Face** Plane parallel to Ceiling (or just **10º** tilt back) & Ear level to Sternal Notch

Assistants ready to help add or maintain external laryngeal manipulation, head elevation, jaw thrust, mouth opening

Paralysis with Induction

Pharmacologic agents and dosages used for rapid sequence intubation

Sedatives	**Dose**		
Ketamine (**Ketamine** is preferred for patients with **hemodynamic instability** or **renal insufficiency)**	2 mg/kg IV		
Midazolam	0.15 to 0.2 mg/kg IV (decrease dose in elderly)		
Propofol	1 to 2.5 mg/kg IV (decrease dose in elderly) (titrate the dose)		
Neuromuscular Blocking (NMB) Agents	**Dose**	**Onset**	**Duration**
Succinylcholine (depolarizing NMB) **Contraindications:** • Hyperkalaemia e.g. renal failure • Organophosphate poisoning • Delayed severe burns • Prolonged crush injuries	1.5 mg/kg IV (adults) 2 mg/kg IV (infants) 3mg/kg IV (new-borns)	½ to 1 min	6-10 min
Rocuronium (nondepolarizing NMB) *Rocuronium has a short duration which generally makes it the preferred of the nondepolarizing neuromuscular blockers for ED RSI*	1.2mg/kg IV (shorter onset with longer duration)	1 min	20 mins

Pass the tube /Laryngeal Mask Airway (LMA)

Limit attempt to **< 30 seconds**. Proceed down the algorithm **after 30 seconds**

Proof of Intubation/ LMA Insertion

5 Point Auscultation – **Epigastrium,** Bilateral Axillae, Bilateral Lung Bases

Waveform Capnography - Maintain CO_2 level at **35- 45mmHg**

Successful

- Self-inflating bag valve resuscitator ventilation – 1 breath every 6s
- Secure tube at a **depth of 3 x ET Tube size at the teeth/gums**
- Check vital signs (BP, PR, RR, SPO_2, T°C, **RBS**)
- Connect patient to the ventilator. **See 7. Guideline for Initiation of Mechanical Ventilation Algorithm**
- Initiate **postintubation analgesia** and **sedation**
  - Morphine 0.1 – 0.4mg/kg/hr
  - Ketamine (analgesic and sedative) 0.05 – 0.4mg/kg/hr
  - Midazolam 0.02 - 0.1mg/kg/hr
  - Dexmedetomidine 0.2 – 0.7 µg/kg/hr
- Obtain portable CXR to **Confirm Depth of ET Tube NOT location**

Not Successful

Resume BVM ventilation - 1 breath every 3 seconds

See 6. Failed Intubation Algorithm