



Clinical Practice Procedures: Airway management/Rapid sequence induction

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Date	July, 2022
Purpose	To ensure a consistent procedural approach to rapid sequence induction.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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Rapid sequence induction

July, 2022

Rapid sequence induction (RSI) is the administration of an induction agent followed by a rapid acting neuromuscular blocking agent to induce unconsciousness and motor paralysis to facilitate endotracheal intubation.

There is a growing body of evidence (particularly in trauma) that pre-hospital RSI can be performed safely and with no greater complication rates to that experienced in the emergency department.^[1,2]

This is particularly so when there is a clear operational framework in place to guide the procedure.

QAS RSI team consists of 3 members:

RSI supervisor	Assumes overall responsibility for patient management during RSI. Typically this role is performed by the CCP from the High Acuity Response Unit. The RSI supervisor is responsible for instigation of the failed intubation algorithm if required.
Airway clinician	Manages the patient's airway and performs the intubation. This role is typically performed by a CCP. However, in a predicted difficult intubation for anatomical or pathophysiological reasons, the most experienced operator should perform this role.
Circulation clinician	Responsible for placing monitoring equipment and administering any drugs. This role is typically performed by an ACP.

Indications

- Neuroprotection for head injury
- Anticipated clinical course requiring anaesthetic
- Global management of the multi-injured patient
- Airway/ventilation compromise (actual/potential)
- Humanitarian reasons

Contraindications

- Nil specific


Complications

- Unrecognised oesophageal intubation
- Malposition
- Aspiration
- Hypoxia
- Laryngospasm
- Oropharyngeal trauma
- Vagal stimulation

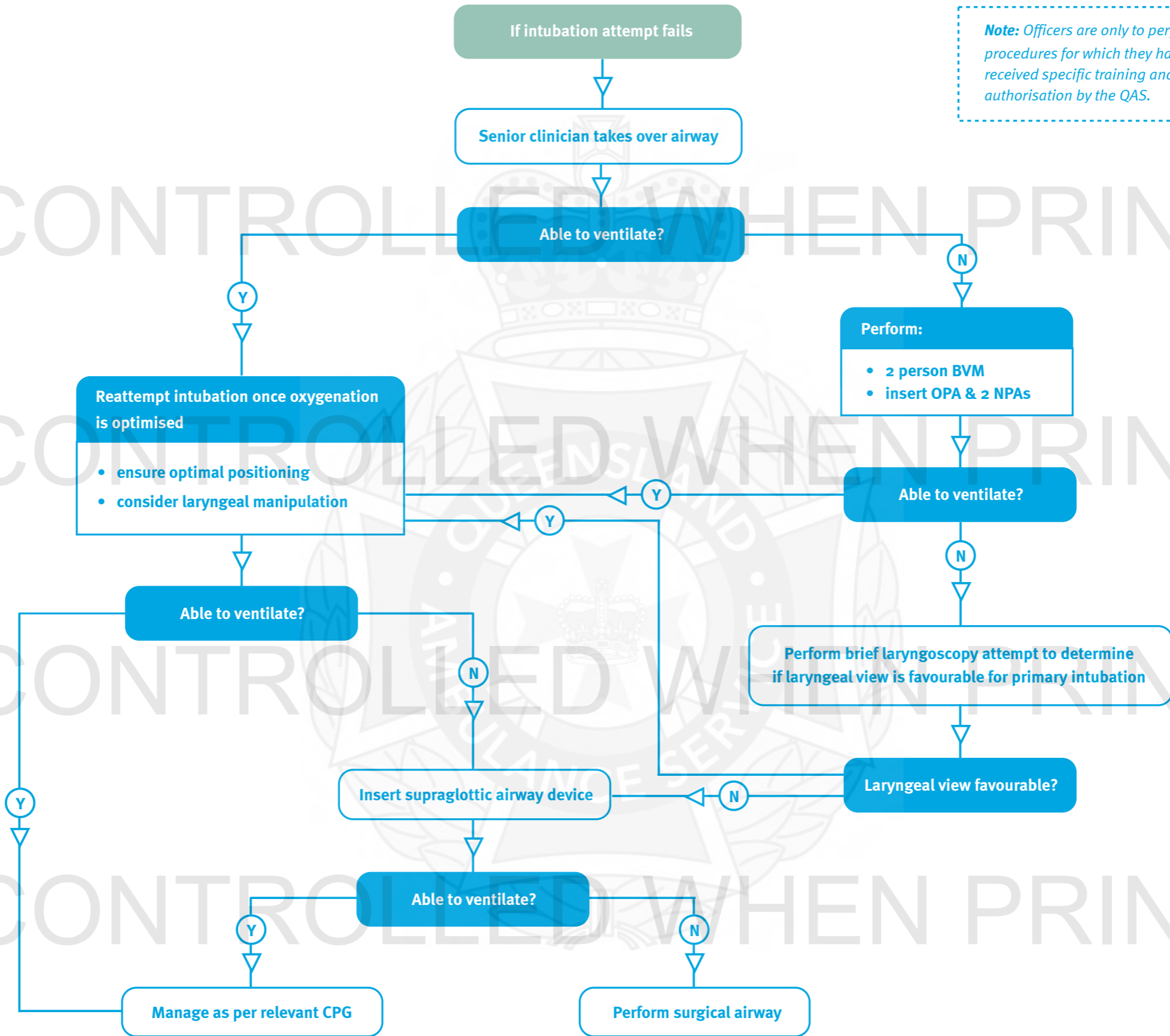
Procedure – Rapid sequence induction

Adult

1. Assign RSI roles
2. Complete RSI checklist (*see opposite*)
3. Complete RSI brief
4. Administer the induction agent/s and relaxant
5. Provide MILS (open c-collar) if appropriate
6. Place OPA +/- NPA(s)
7. Ventilate the patient with a BVM until relaxation is achieved
8. Perform laryngoscopy
9. Suction as required
10. Consider laryngeal manipulation to optimise visualisation of the larynx.
11. Insert an intubating catheter (bougie) for ETT \geq 6.0 mm only.
12. While maintaining visualisation of the larynx, request the airway assistant to place an appropriately sized ETT over the intubating catheter.
13. Hold the ETT and gently remove the bougie and laryngoscope.
14. Using a Leur-Lok™ tip syringe, inflate the ETT cuff with sufficient air to provide an effective seal.
15. Connect the resuscitation bag and commence ventilation.
16. Confirm correct tracheal placement by observing an appropriate continuous EtCO₂ waveform (minimum of 6 ventilations of moderate tidal volume required for confirmation).
17. Secure the ETT (cloth tie/commercial ETT holder/tape) as appropriate.
18. Consider insertion of a bite block.
19. Administer post intubation sedation as required (titrated aliquots of morphine/fentanyl and/or midazolam).
20. Consider OG tube insertion.

RSI Checklist	
	Indications: <ul style="list-style-type: none">• Neuroprotection for head injury• Anticipated clinical course requiring anaesthetic• Global management of the multi-injured patient• Airway/ventilation compromise (actual/potential)• Humanitarian reasons
1. Pre-oxygenation	BVM with PEEP valve, EtCO ₂ and adequately inflated face mask Oropharyngeal airway +/- nasopharyngeal airway inserted Consider NP high flow oxygen (2 L/kg – max 15 L/min) Oxygen source (supply/flow/connection)
2. Assessment/Monitoring	BGL WNL Assess basic neurology ECG, NIBP, SpO ₂ , EtCO ₂ (mandatory in circuit)
3. Access	Patent IV or IO access (visualised) Fluids connected and flowing freely
4. Suction	Suction catheter – consider SSCOR DuCanto Catheter™ On and working (+/- second unit)
5. Equipment	Laryngoscope (x 2) ETT and spare ETT (cuffs checked) Bougie 10 mL syringe Tube tie Manometer Supraglottic airway available Surgical airway available
6. Position	Patient positioning optimised Manual in line stabilisation (MILS) for suspected C-spine injury
7. Drugs	Induction agents: <ul style="list-style-type: none">• Ketamine +/- fentanyl• Propofol +/- fentanyl Relaxant: <ul style="list-style-type: none">• Rocuronium Pressor: <ul style="list-style-type: none">• Metaraminol
8. Brief team prior to RSI	
Post RSI Checklist	
<ul style="list-style-type: none">• Appropriate sedation and analgesia• Reassess VSS• ETT cuff pressure assessed• Consider OGT• Patient temperature• Hospital notification	
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Note: Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.



Additional information

- Pre-hospital RSI should be performed in the back of an Ambulance with the patient on the stretcher when possible.

Advantages of this location include:

- Scene safety
- Cleaner environment for equipment
- Better access to equipment and monitoring
- Adequate access to the patient and the patient's airway
- The most appropriate position is with the stretcher part way out of the ambulance with the intubator kneeling at the patient's head
- More appropriate lighting, including protection from direct sunlight
- Protection from the elements (eg. rain, wind)
- Access to better suction
- Pre-hospital RSI must be performed with a bougie at all times. This facilitates the likelihood of a successful first-pass intubation through practice standardisation, as well as improving familiarity with the device in preparation for more difficult airways.
- The team performing the RSI and intubation must have a thorough understanding of the failed intubation drill. In the event of a failed intubation, the most experienced operator must assume control of the airway.

- If there is an absence of EtCO₂ sensing or inappropriate EtCO₂ waveform/measurement, the ETT must be immediately removed and the failed airway algorithm must be commenced.
- If intubation is unable to be achieved within 30 seconds **OR** two (2) attempts the failed airway algorithm must be commenced.
- If, on patient assessment, the airway appears particularly difficult, or there are patient factors that suggest the intubation will be very high risk (e.g. significant haemodynamic instability, hypoxia), the most experienced clinician should undertake the first attempt. In such circumstances consideration should be given to delaying intubating until arrival at the hospital.
- Paediatric patients may prove difficult to intubate in the pre-hospital setting. Challenging airway anatomy and infrequency of intubating opportunities are thought to be the main factors accounting for the lower success rate in paediatric ETT insertion.^[2] Specialised training in paediatric airways is important to acquire and maintain skills in this population.