



## Prepare Patient



## Prepare Equipment/Drugs



## Prepare Team

1. **Assess for difficult intubation:** 
  - Co-morbidities
  - History of documented difficult intubation or airway alert
  - Previous grade of intubation
  - Previous size ETT used
  - Loose teeth
  - Fasting status


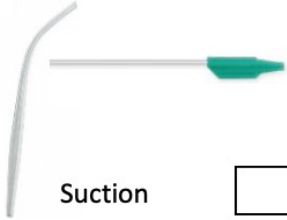





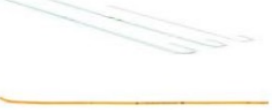








(if assessed as difficult - d/w KIDSNTS consultant)
  
2. **Clinical status consideration:** 
  - Method of induction (inhalational vs IV)
  - Patient allergies
  - Location (theatre/resus/ward)
  - Haemodynamic stability – if instability:
    - Discuss with KIDSNTS consultant
    - Ensure senior team members present
    - Consider causes including cardiac
    - Consider holding PEEP
    - Acid/Base balance correction
    - Consider peripheral inotropes
    - Fluid boluses available
    - Resus drugs/Defibrillator
    - Consider lower dose induction agents
  
3. **Position patient:** 
  - Manual in-line stabilisation required?
  - Neutral vs Sniffing morning air position
  - Consider roll
  
4. **Insert and/or aspirate NGT**
5. **Adequate IV access – flush prior**
6. **Pre-oxygenation**

- Equipment:**
1. **Complete equipment checklist overleaf**
  2. **Apply monitoring:** 
    - ECG
    - SpO2 with QRS volume audible
    - NIBP cycling 1 minute
    - EtCO2 in circuit
- Drugs:**
1. **Intubation drugs:** 
    - Sufficient and multiple doses readily available
    - Ketamine 1-2 mg/kg
    - Thiopentone 2-4 mg/kg – reserved for haemodynamically stable status epilepticus patients
    - Rocuronium 1 mg/kg
  2. **Additional drugs:** 
    - Consider Atropine 10-20 mcg/kg
    - See KIDS drug calculator
  3. **Fluids:** 
    - 10 ml/kg crystalloid or colloid

Page 2: Equipment checklist  
Pages: 3-5 DAS guidelines

1. **Introductions**
  2. **Role allocation:** 
    - Team leader – responsible for end of bed awareness and monitoring
    - 1st and 2nd intubator
    - Airway assistant
    - Drugs
    - +/- scribe
  3. **Confirm airway plan:** 
    - Plan A/B/C/D
    - Escalation plan for more help
- Post Intubation Care:**
1. **Secure ETT - KIDS tape guideline**
  2. **Confirm ETT position:** 
    - Capnography – appropriate values and waveform
    - Auscultation
    - Chest X Ray – tip at T2/3 ideal
  3. **Sedation infusions:** 
    - Morphine 10-40 mcg/kg/hr
    - Midazolam 0.5-3 mcg/kg/min
    - Consider Rocuronium infusion 1mg/kg/hr
  4. **Ventilation:** 
    - Lung Protective Ventilation strategy with Ti 0.6 – 0.9s



|  |  |  |   |
|--|--|--|---|
|  <p>Oral Airway <input type="checkbox"/></p>        |  <p>Suction <input type="checkbox"/></p>           |  <p>Oxygen <input type="checkbox"/></p>               |  <p>Self-Inflating bag <input type="checkbox"/></p>  |
|  <p>Oxygen mask <input type="checkbox"/></p>        |  <p>Fluid &amp; Drugs <input type="checkbox"/></p> |  <p>ET Tubes <input type="checkbox"/></p>             |  <p>Stylet &amp; Boogie <input type="checkbox"/></p> |
|  <p>Laryngoscopes <input type="checkbox"/></p>     |  <p>Lubricant Gel <input type="checkbox"/></p>    |  <p>Anaesthetic Circuit <input type="checkbox"/></p> |  <p>LMA <input type="checkbox"/></p>                |
|  <p>ETCO<sub>2</sub> <input type="checkbox"/></p> |  <p>Syringe <input type="checkbox"/></p>          |  <p>Stethoscope <input type="checkbox"/></p>        |  <p>Prepared Tapes <input type="checkbox"/></p>    |

**Difficult MV**



**Give 100% oxygen**



**Call for help**

## Step A Optimise head position

Consider:

- Adjusting chin lift/jaw thrust
- Inserting shoulder roll if <2 years
- Neutral head position if >2 years
- Adjusting cricoid pressure if used
- Ventilating using two person bag mask technique

Check equipment

Consider changing:

- Circuit
  - Mask
  - Connectors
- If equipment failure is suspected, change to self-inflating bag and isolate from anaesthetic machine promptly

Depth of anaesthesia

- Consider deepening anaesthesia  
Use CPAP

## Step B Insert oropharyngeal airway

**Call for help again if not arrived**

Assess for cause of difficult mask ventilation

- Light anaesthesia
- Laryngospasm
- Gastric distension – pass OG/NG tube

- Maintain anaesthesia/CPAP  
Deepen anaesthesia (Propofol first line)
- If relaxant given – intubate
  - If intubation not successful, go to unanticipated difficult tracheal intubation algorithm

## Step C Second-line: Insert SAD (e.g. LMA™)

- Insert SAD (e.g. LMA™) – **not > 3 attempts**
- Consider nasopharyngeal airway
- Release cricoid pressure

**Good airway**

**Yes**

**Continue**

**SpO<sub>2</sub> >80%**

- Consider:
- SAD (e.g. LMA™) malposition/blockage
  - Equipment malfunction
  - Bronchospasm
  - Pneumothorax

**Wake up patient**

**No**

**SpO<sub>2</sub> <80%**

- Attempt intubation  
• Consider paralysis

**Succeed**

**Proceed**

**Fail**

**Go to scenario cannot intubate cannot ventilate (CICV)**

SAD = supraglottic airway device

**Difficult direct laryngoscopy**



**Give 100% oxygen and maintain anaesthesia**



**Call for help**

## Step A Initial tracheal intubation plan when mask ventilation is satisfactory

Ensure: Oxygenation, anaesthesia, CPAP, management of gastric distension with OG/NG tube

Direct laryngoscopy – **not > 4 attempts**

Check:

- Neck flexion and head extension
- Laryngoscopy technique
- External laryngeal manipulation – remove or adjust
- Vocal cords open and immobile (adequate paralysis)

If poor view – consider bougie, straight blade laryngoscope\* and/or smaller ETT

**Succeed**

Tracheal intubation

Verify ETT position

- Capnography
- Visual if possible
- Auscultation

If ETT too small consider using throat pack and tie to ETT

**If in doubt, take ETT out**

**Failed intubation with good oxygenation**

## Step B Secondary tracheal intubation plan

**Call for help again if not arrived**

Insert SAD (e.g. LMA™) – **not > 3 attempts**

- Oxygenate and ventilate
- Consider increasing size of SAD (e.g. LMA™) once if ventilation inadequate

**Succeed**

- Consider modifying anaesthesia and surgery plan
- Assess safety of proceeding with surgery using a SAD (e.g. LMA™)

**Unsafe**

**Postpone surgery  
Wake up patient**

**Safe**

**Proceed with surgery**

**Safe**

- Consider 1 attempt at FOI via SAD (e.g. LMA™)
- Verify intubation, leave SAD (e.g. LMA™) in place and proceed with surgery

**Succeed**

**Failed oxygenation e.g. SpO<sub>2</sub> <90% with FiO<sub>2</sub> 1.0**

**Failed intubation via SAD (e.g. LMA™)**

**Postpone surgery  
Wake up patient**

- Convert to face mask
- Optimise head position
- Oxygenate and ventilate
- Ventilate using two person bag mask technique, CPAP and oro/nasopharyngeal airway
- Manage gastric distension with OG/NG tube
- Reverse non-depolarising relaxant

**Succeed**

**Failed ventilation and oxygenation**

**Go to scenario cannot intubate cannot ventilate (CICV)**

Following intubation attempts, consider • Trauma to the airway • Extubation in a controlled setting

\*Consider using indirect laryngoscope if experienced in their use

SAD = supraglottic airway device

**Failed intubation  
inadequate ventilation**



**Give 100% oxygen**



**Call for help**

## Step A Continue to attempt oxygenation and ventilation

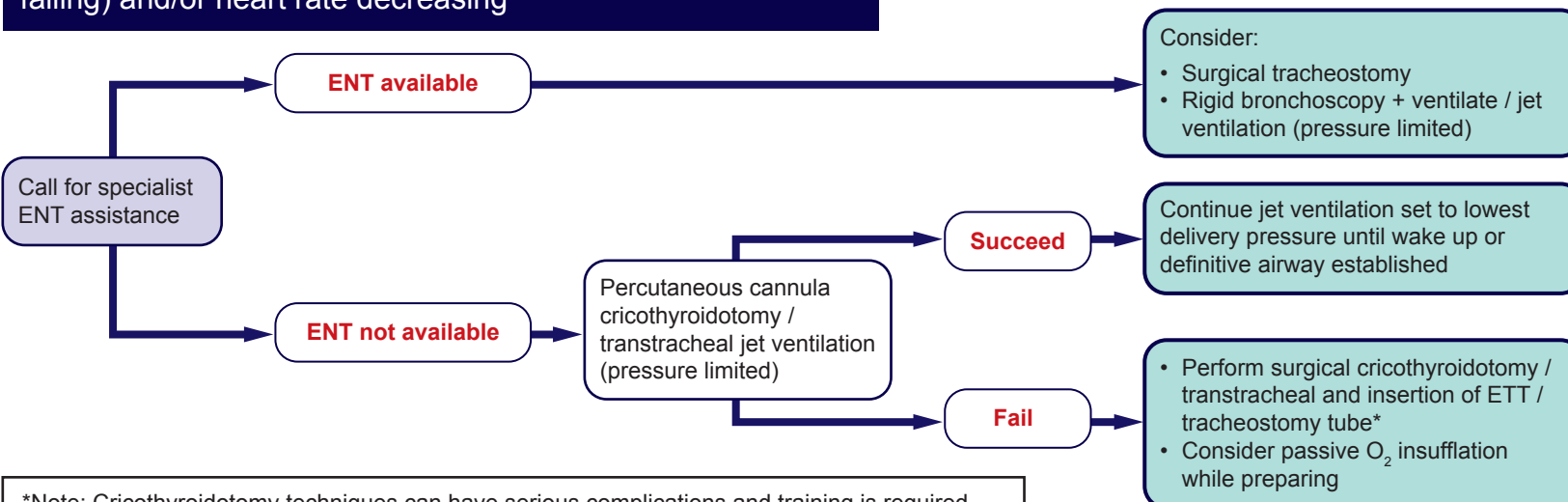
- FiO<sub>2</sub> 1.0
- Optimise head position and chin lift/jaw thrust
- Insert oropharyngeal airway or SAD (e.g. LMA™)
- Ventilate using two person bag mask technique
- Manage gastric distension with an OG/NG tube

## Step B Attempt wake up if maintaining SpO<sub>2</sub> >80%

If rocuronium or vecuronium used, consider suggamadex (16mg/kg) for full reversal

Prepare for rescue techniques in case child deteriorates

## Step C Airway rescue techniques for CICV (SpO<sub>2</sub> <80% and falling) and/or heart rate decreasing



**Call for help again if not arrived**

### Cannula cricothyroidotomy

- Extend the neck (shoulder roll)
- Stabilise larynx with non-dominant hand
- Access the cricothyroidotomy membrane with a dedicated 14/16 gauge cannula
- Aim in a caudad direction
- Confirm position by air aspiration using a syringe with saline
- Connect to either:
  - adjustable pressure limiting device, set to lowest delivery pressure
- or
- 4Bar O<sub>2</sub> source with a flowmeter (match flow l/min to child's age) and Y connector
- Cautiously increase inflation pressure/flow rate to achieve adequate chest expansion. Wait for full expiration before next inflation
- Maintain upper airway patency to aid expiration

\*Note: Cricothyroidotomy techniques can have serious complications and training is required – only use in life-threatening situations and convert to a definitive airway as soon as possible

SAD = supraglottic airway device