Paediatric Airway Guidelines 2012

The following three guidelines relate to the management of the unanticipated difficult airway in children aged 1 to 8 years.

They are:

- Difficult mask ventilation during routine induction of anaesthesia in a child aged 1 to 8 years
- Unanticipated difficult tracheal intubation during routine induction of anaesthesia in a child aged 1 to 8 years
- Cannot intubate and cannot ventilate (CICV) in a paralysed anaesthetised child aged 1 to 8 years

Paediatric patients are looked after in many hospitals and specialist paediatric services are neither necessary nor appropriate in all settings. The target audience for these guidelines is for the non-specialist anaesthetist who wishes to learn or maintain paediatric airway skills, rehearse unexpected difficult airway scenarios and teach good practice.

These guidelines are clinical, but are backed by a robust process. A formal paper giving all the background data used to develop these guidelines will be published in the near future.

Internationally it was clear that most units are using airway management guidelines for children that have been expanded from adult practice. We have therefore specifically developed these guidelines following an exhaustive process that involved a Delphi analysis (which ensured careful refection of each step of the pathway, and a grading of how confident an expert group was in endorsing each step), and an extensive literature review. Following this we had further external reviews, and placed the guideline on the APA website requesting comments-all views were considered. There is very little grade 1, (randomised control trial), evidence to support good practice in the management of the difficult paediatric airway, and guidance must therefore be essentially a clinical issue.

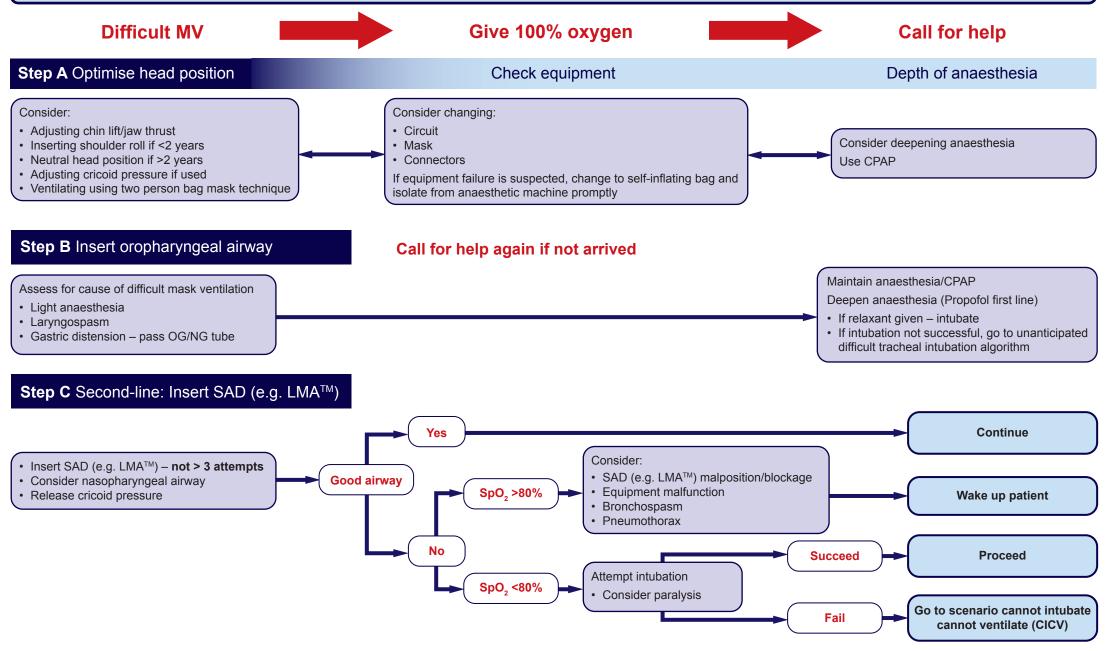
The Guidelines Group supported by the Association of Paediatric Anaesthetists, the Difficult Airway Society and liaising with the RCoA, has taken a careful and thorough approach to review current practice. We hope these guidelines will be used widely, and would encourage feedback. We trust that, long term; they will be of use to all anaesthetists who manage children in day-to-day clinical practice, and those who teach safe airway techniques.



Difficult mask ventilation (MV) – during routine induction of anaesthesia in a child aged 1 to 8 years



SAD = supraglottic airway device





Unanticipated difficult tracheal intubation – during routine induction of anaesthesia in a child aged 1 to 8 years



Difficult direct laryngoscopy



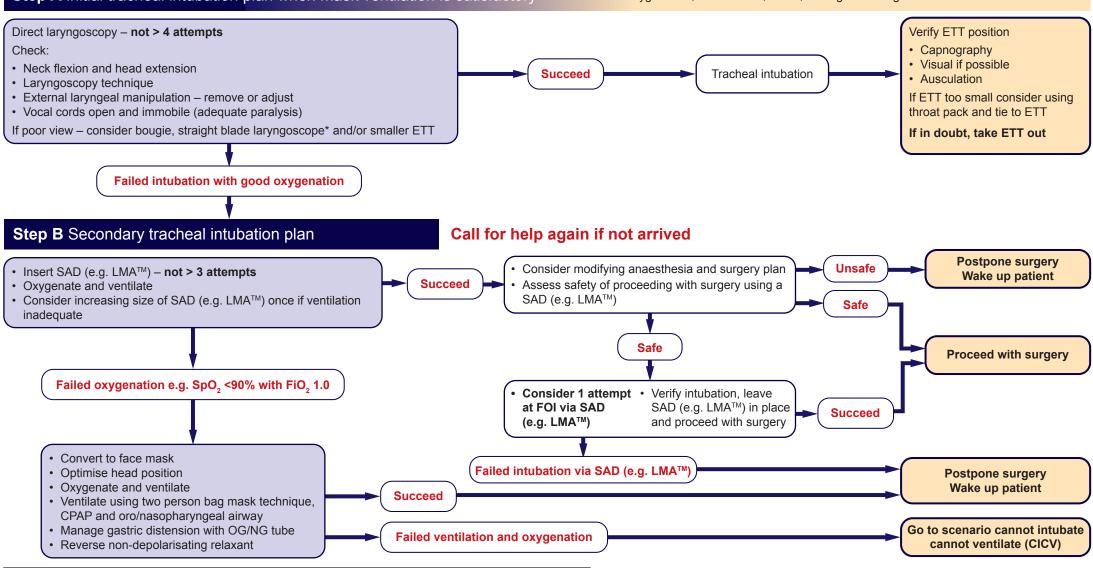
Give 100% oxygen and maintain anaesthesia



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





Cannot intubate and cannot ventilate (CICV) in a paralysed anaesthetised child aged 1 to 8 years



Failed intubation inadequate ventilation



Give 100% oxygen



Call for help

Step A Continue to attempt oxygenation and ventilation

- FiO₂ 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 SpO₂ >80%

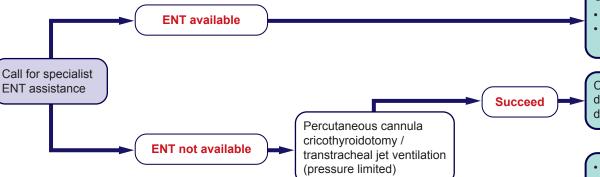
If rocuronium or vecuronium used, consider suggamadex (16mg/kg) for full reversal

Prepare for rescue techniques in case child deteriorates

Step C Airway rescue techniques for CICV (SpO₂ <80% and falling) and/or heart rate decreasing

Call for help again if not arrived

Fail



*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

Surgical tracheostomy

Consider:

 Rigid bronchoscopy + ventilate / jet ventilation (pressure limited)

Continue jet ventilation set to lowest delivery pressure until wake up or definitive airway established

- Perform surgical cricothyroidotomy / transtracheal and insertion of ETT / tracheostomy tube*
- Consider passive O₂ insufflation while preparing

Cannula cricothyroidotomy

- · Extend the neck (shoulder roll)
- Stabilise larynx with non-dominant hand
- Access the cricoithyroidotomy 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

OI

- 4Bar O₂ 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 uper airway patency to aid expiration

SAD = supraglottic airway device