DAS VEMS AirDrills: Emergency Department

Based on DAS 2025 Guidelines – Unanticipated Difficult Tracheal Intubation (Plans A-D)

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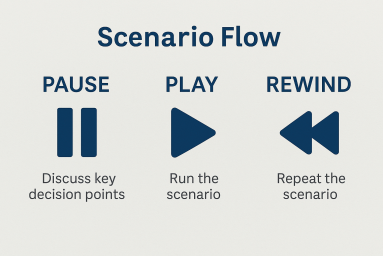
Format: Pause–>Play–>Rewind (low-fidelity / table top drill)

Learners: Emergency department teams including doctors (all grades), Emergency Care Practitioners, Nursing staff, Anaesthetic Teams, Critical Care teams

Facilitators: 1—2 (i.e. Emergency department educator / Airway Lead)



1. OVERVIEW

Scenario: A patient is brought into the Emergency Department (ED) with reduced consciousness of unknown cause. They require urgent intubation to secure their airway and provide mechanical ventilation. Intubation develops into an unanticipated failed intubation. The focus is on decision-making, declaration, communication, and transition through the DAS 2025 algorithm. Emergency Department specific complexity can be layered to explore human factors and system pressures. This AirDrill is designed to be performed as a **Visually Enhanced Mental Simulation (VEMS)** using the printable resources on the DAS Education Package. It can also be run simply as a mental rehearsal for emergency department teams.

2. EMERGENCY DEPARTMENT SPECIFIC CONSIDERATIONS

Airway management in the non-operating theatre environment is associated with a higher risk of adverse events including failed intubation, oesophageal intubation, hypoxia and cricothyroidotomy.[1] The reasoning for this is complex but includes limited physiological reserve of patients, availability of trained staff, levels of assistance and working environment (i.e. team variability, distraction, competing priorities).[2] Given these recognised risks, senior input should be sought early. Despite a culture of collaborative support for airway management with anaesthetic and critical care teams, emergency medicine clinicians may be required to provide leadership in airway management scenarios.

A checklist should be used for all ED intubations. Routine use of a checklist allows preparation of the patient, gathering of all required equipment and drugs, and facilitates preparation for difficulty.[2] The 2025 DAS guidelines contain an updated 'Emergency Tracheal Intubation Checklist,' this can be found in the appendix.

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3. SESSION STRUCTURE

The scenario below involves a **clinician** competent in airway management and a skilled **airway assistant**. The airway assistant may be an appropriately trained emergency department nurse/practitioner, ODP or anaesthetic nurse (depending on local arrangements). Each section corresponds to a Plan (A—D) in the DAS 2025 algorithm, prompting a mental rehearsal and discussion of the scenario. This should allow for local discussion of context/equipment/availability of support that is relevant to this team. Some of these discussions may lead to changes in process, equipment, and locations in your department. Please see accompanying **'Facilitators guide to DAS AirDrills'** and **Demo Videos** for further facilitator information.

4. PRE-BRIEF

Before running the scenario, facilitators should take a few minutes to set the scene and create optimal conditions for effective learning

Setting the scene: Introduce the session as a low-fidelity Drill, based on the DAS 2025 algorithm. Explain that the aim is to build shared mental models, increase guideline familiarity and rehearse decision-making and communication as a team.

Format: The session uses a Pause–Play–Rewind structure. Facilitators can pause the scenario at key decision points, allow the team to discuss options then play forward or rewind to replay a segment with different decisions. There is no formal assessment. Emphasise that this is a safe space to ask questions, make mistakes, and explore uncertainty. Invite the team to speak up and challenge each other constructively.

Role of the facilitator: Facilitators guide the scenario flow, provide clinical cues, keep the group on track, and prompt reflection at pause points. The level of scenario complexity can be adjusted depending on the level of the learners.

5. BRIEF

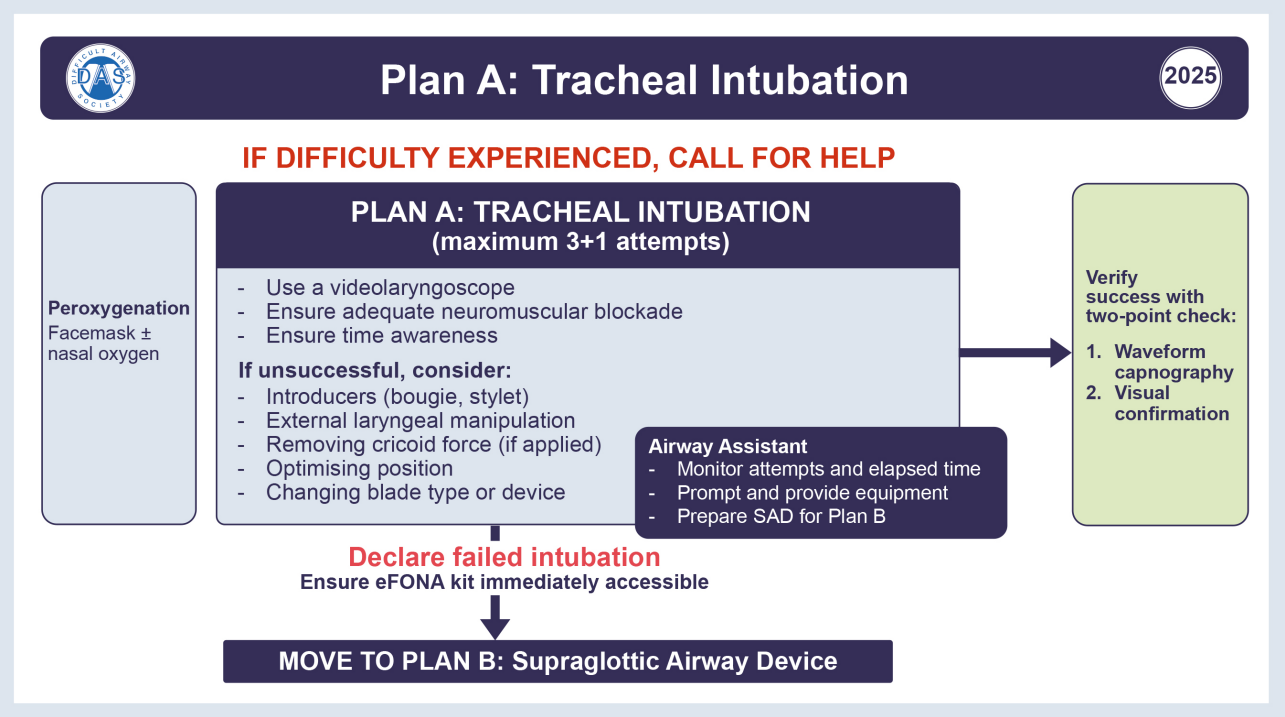
- A patient is brought into the Emergency Department with reduced consciousness of unknown cause and hypoxia. They have a reduced level of consciousness with a Glasgow Coma Scale (GCS) score of 5/15. Oxygen saturations are 90% despite 15 L/min of inspired oxygen. The respiratory rate is 8 breaths per minute.

- The patient requires urgent endotracheal intubation to secure their airway and provide mechanical ventilation. It is *4am** and the *On-Call Emergency Department Consultant on call is at home**. The *anaesthetic/Critical care team are not currently available**. [**Can change time and availability depending on team and context]*

- What is your plan and talk us through the next steps?

DAS AirDrills: Emergency Department

PLAN A – Tracheal Intubation



Scenario flow:

→ Attempts at **Videolaryngoscopy** confirm a poor glottic view (Grade 3-4)
→ Videolaryngoscopy attempts fail (max 3+1)

Facilitator prompts:

→ Allow team to optimise (head-up position, external laryngeal manipulation, introducer use)
→ State that the learner is unable to intubate at each attempt
→ Oxygenation maintained if peroxygenation is achieved between attempts

Discussion points:

- **Checklist:** Did preparation for intubation include completion of an intubation checklist? Discuss Plan A-D. Is waking up an option? Role allocation including drug administrator, monitoring of vitals.
- **Leadership:** Who was leading – was it clear to the team?
- **Assessment:** Anticipation and predictors of anatomical and physiological airway difficulty. Assess and identify cricothyroid membrane. Optimise cardiovascular status. Resuscitation vs intubation: Should optimisation occur before induction?
- **Early help-seeking:** who would make this call, and how would you do it in this situation/context? Who would you ask for help?
- **Technical reminders:** Max 3+1 attempts (can progress to plan B at any point), optimisation between attempts + peroxygenation; timely transitioning, priming in parallel for eFONA.
- **Role of airway assistant:** Prompting, monitoring, priming (getting eFONA kit).
- **Team challenge:** What if the intubator wanted to continue with multiple attempts? How would you manage distractions in a busy ED?
- **Declaration:** "Failed intubation declared. Moving to Plan B."

Moving on

→ Options to replay scenario, or to continue to Plan B

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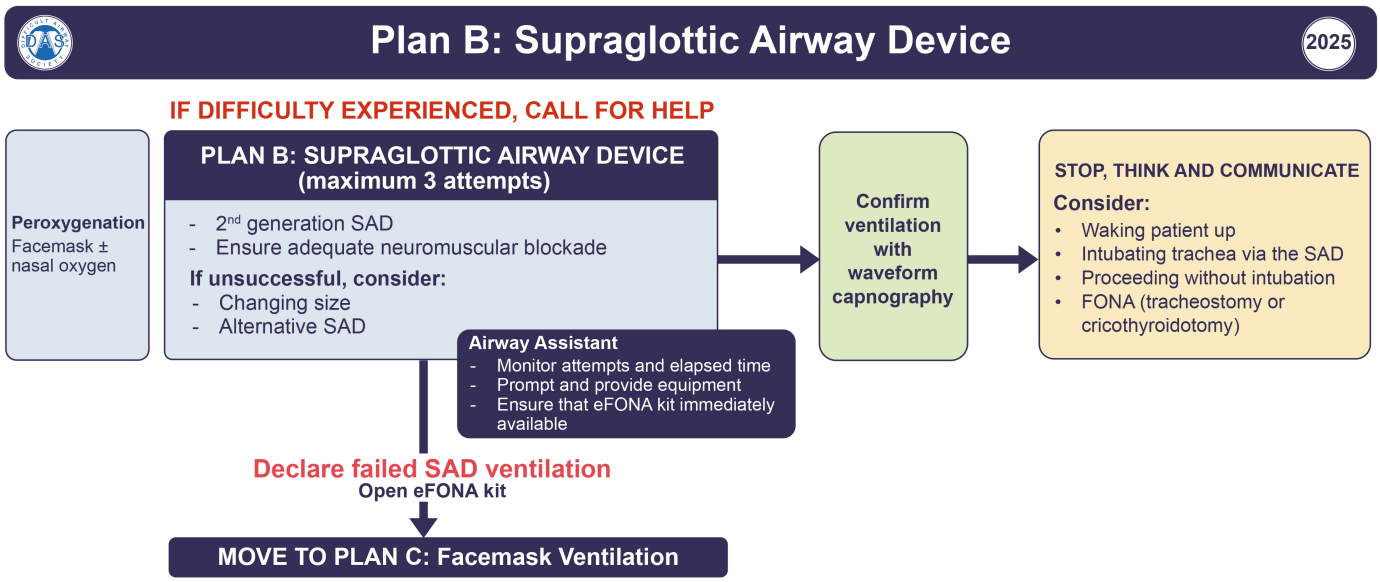
PLAN B - Supraglottic Airway Device (SAD)



Scenario flow:

→ 2nd generation SAD insertion after failed intubation.
→ First attempt fails; second succeeds with sustained $ETCO_2$ trace.

Facilitator prompts:

→ Allow clinician to alternate between Plan B and Plan C as per DAS Critically Ill Patient intubation guidelines (see appendix), but **maximum 3 attempts** at each
→ Pause once effective oxygenation/ sustained ETCO2 achieved
→ Allow team to **STOP, THINK AND COMMUNICATE** options

Discussion points:

PAUSE

- **Decision-making:**
  - Leave SAD in place to await senior anaesthetic support, intubate via SAD, or obtain front of neck access.
- **Situational awareness:**
  - Blood pressure now drops post-induction?
  - How does physiological instability influence airway decisions?
  - Emergency buzzer goes off in next cubicle?
  - How is situational awareness maintained under distraction?
- **Team communication and declaration:**
  - *"We have a functioning SAD, oxygenation stable, plan is to…."*
  - How to handover if senior anaesthetist/ ITU team arrives now? *"This is a cannot intubate can oxygenate situation in a critically unwell patient with a low GCS requiring mechanical ventilation, we have attempted...'*
  - Learner should display use of clear, standardised language.

Moving on

PLAY REWIND

→ Options to replay scenario or to continue to Plan C

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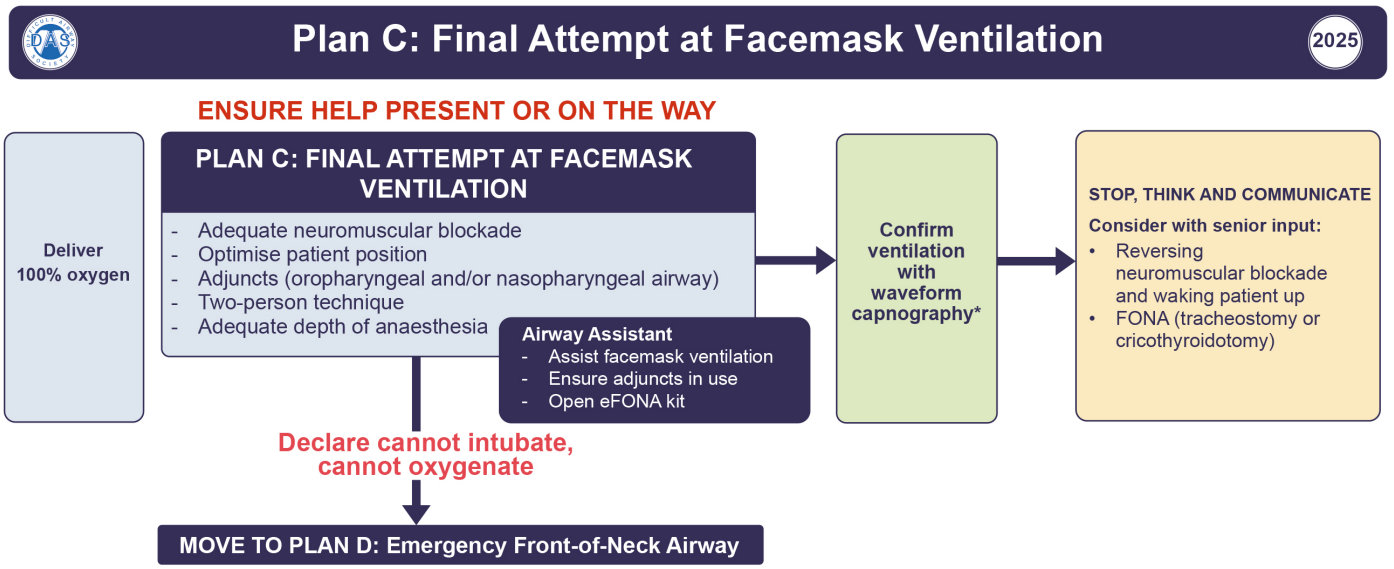
PLAN C – Facemask Ventilation



Scenario flow:

→ 3 attempts at SAD insertion fail
→ Team attempts mask ventilation, further desaturation.

Facilitator prompts:

→ Optimise (two-person technique, full paralysis)
→ Ensure patient is asleep and paralysed
→ There is no ETCO2, help arrives….

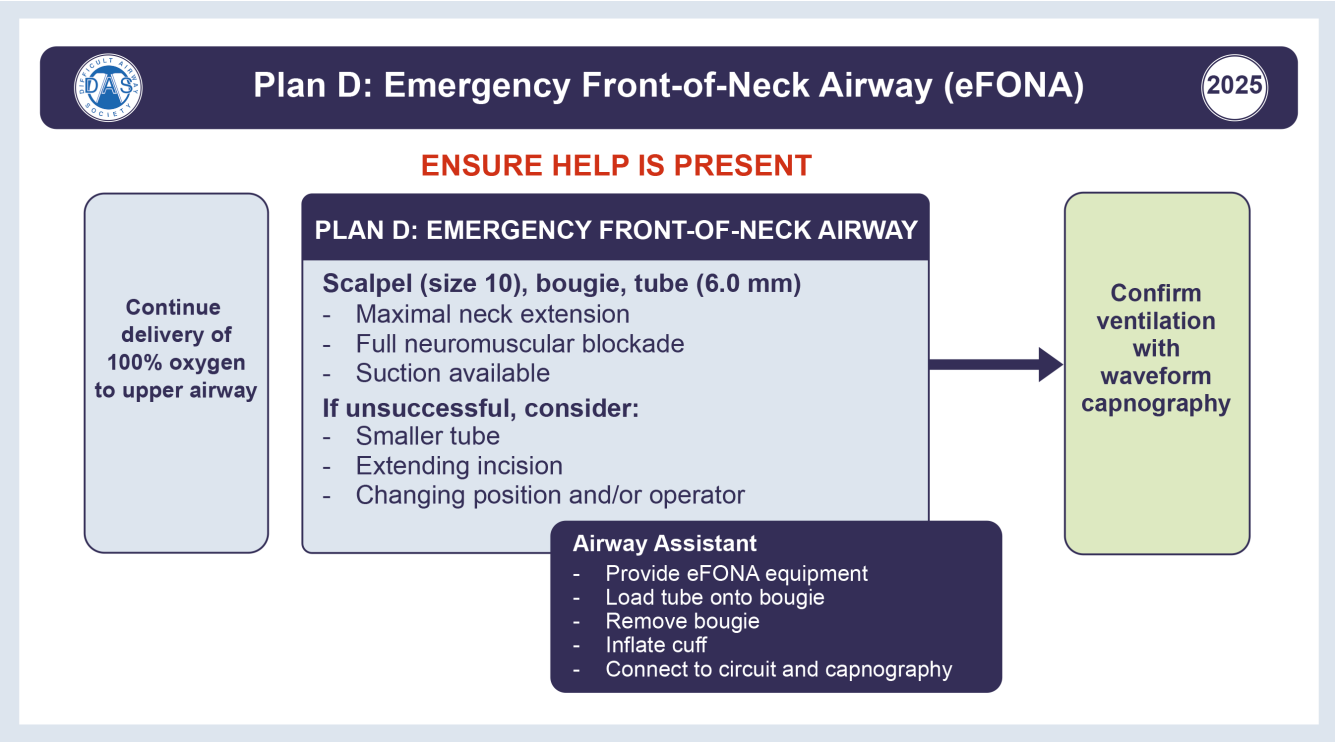
Discussion points:

- **Declaration:** *"Failed SAD Ventilation"* then *"Can't intubate, Can't oxygenate – move to Plan D – emergency Front of Neck Airway"*
- **Situation Awareness:** Patient likely to be haemodynamically unstable or peri-arrest at this point. Who would be managing this?
- **Role allocation:** Evidence of clear leadership and active followship i.e., clinician directs; airway assistant opens eFONA kit; nurse calls ENT support, if available.
- **Preparation for eFONA:** Priming by opening of eFONA kit after failed SAD ventilation/Plan B, verbally confirm cricothyroid technique, confirm paralysed, position patient, transitioning with anticipation of immediate progression to eFONA
- **Team communication:** Closed-loop confirmations; *"eFONA kit open and ready."*

Moving on:

→ Options to replay scenario or to continue to Plan D

PLAN D – Emergency Front-of-Neck Airway (eFONA)



Scenario flow:

→ CICO declared; **perform FONA** (learners talk through steps of eFONA)

Facilitator prompts:

→ Discuss eFONA steps/method
→ Reinforce leadership, role clarity, and calm communication

Discussion points:

PAUSE

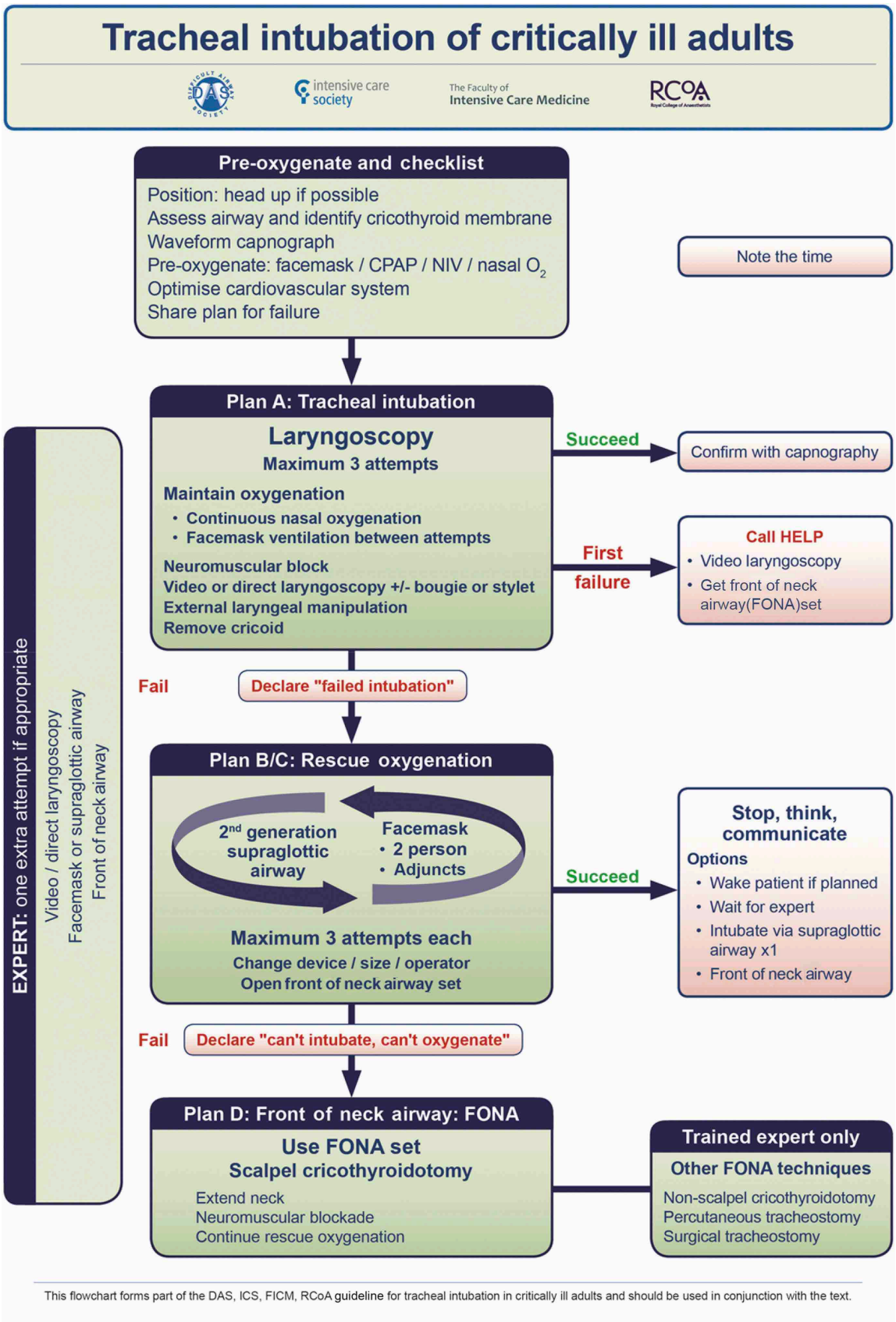
- **Declaration:** *"Emergency front-of-neck airway required. Vertical Incision technique."*
- **Role assignment:** Leader allocates tasks: *"XXX attempt to maintain oxygen, XXX perform the incision, XXX assists with kit, XXX manages haemodynamics"*
- **Communication:** Concise handover when help arrives: *"CICO declared, eFONA performed, size 6.0 tube in situ, sustained capnography waveform confirmed."*
- **Discussion points:**
  - Who should do the eFONA?
  - What if a senior anaesthetist arrives at this time?
  - What eFONA technique should be performed, if not previously confirmed?

→ **What would the next steps be in this situation?**

6. DEBRIEF THEMES

- **DAS intubation guidelines** – Specific to the Critically Unwell (2018). Differences include: alternating between plan B (2nd generation supraglottic airway) and plan C (face mask ventilation) – maximum 3 attempts each, use of other FONA techniques in expert hands e.g. percutaneous tracheostomy
- **Language consistency** - Use standardised phrases such as *"Failed intubation"* and *"Cannot intubate, Cannot oxygenate"*
- **Help-seeking** - Early escalation and clarity regarding in-hours vs out-of-hours pathways. Anticipate difficulty and consideration of requesting anaesthetic help prior to induction.
- **Checklists** – Ensure an Emergency Tracheal Intubation Checklist is used consistently, discuss the updated checklist from the DAS 2025 report.
- **Role allocation** – The antipation of a physiological difficult airway and likely haemodynamic instability. Recommendation of team member dedicated to drug management and vitals monitoring.
- **Team communication** - Closed-loop communication, graded assertiveness, clear leadership and active followership. How are competing priorities and distractions in a busy ED managed?
- **Non-technical skills** - Avoid task fixation; ensure timely transitioning between plans; display early priming for eFONA, maintain situational awareness.
- **Effective leadership** - Demonstration of 'hands-off' leadership; use of cognitive aids; short pauses to share mental model and confirm location on the algorithm. Challenges in leadership in dynamic teams and working with variable skills mix.
- **Airway planning and strategy (Plan A)** - Including palpation of cricothyroid membrane and confirmation of eFONA technique based on assessment. Verbalised as part of checklist.
- **Local departmental feedback** - Where is the equipment found, does everyone know this, and could locations etc be improved?
- **Emotional impact** - Encourage supportive debrief and psychological safety.

APPENDIX 1 - TRACHEAL INTUBATION OF CRITICALLY ILL ADULTS 2018



APPENDIX 2 - EMERGENCY TRACHEAL INTUBATION CHECKLIST DAS 2025

Emergency Tracheal Intubation Checklist 2025

Prepare the patient

- ☐ Reliable intravenous access
- ☐ Assessment
  - ☐ Aspiration risk
  - ☐ ATI considered
  - ☐ Cricothyroid membrane identified
- ☐ Physiologically optimised
  - ☐ Fluid / vasopressor / inotrope
  - ☐ Aspirate / consider nasogastric tube
- ☐ Position optimised
  - ☐ Head-up
- ☐ Pre-oxygenation
  - ☐ 3 mins or $ETO_2 \geq 90\%$
  - ☐ Consider HFNO / CPAP / NIV
- ☐ Peroxygenation considered

Prepare equipment

- ☐ Apply Monitors
  - ☐ SpO_2 / waveform capnography / ECG / BP
- ☐ Check equipment
  - ☐ Tracheal tubes x 2
  - ☐ Videolaryngoscope
  - ☐ Bougie / stylet
  - ☐ Working suction
  - ☐ Oropharyngeal / nasopharyngeal airway
  - ☐ SADs
  - ☐ Tube tie / tape
  - ☐ Flexible bronchoscope / Aintree catheter
  - ☐ Timer
- ☐ Check drugs
  - ☐ Induction agent
  - ☐ Opioid
  - ☐ Muscle relaxant
  - ☐ Vasopressor / inotrope
  - ☐ Maintenance of anaesthesia

Prepare the team

- ☐ Allocate roles
  - ☐ Team leader
  - ☐ 1st Intubator
  - ☐ 2nd Intubator
  - ☐ Airway assistant
  - ☐ Drugs
  - ☐ Monitoring patient
  - ☐ Runner
  - ☐ Timer
  - ☐ Cricoid force
- ☐ Physiological difficulty expected?
  - ☐ Who is assigned to manage this?
- ☐ Who will we call if difficulty is encountered?
  - ☐ Where are they?
  - ☐ Contact details
- ☐ Who will perform eFONA?

Communicate airway strategy to team

- ☐ If tracheal intubation fails, can we wake the patient?
- ☐ **Plan A**
  - ☐ Videolaryngoscope
  - ☐ Bougie / stylet
  - ☐ Drugs
  - ☐ eFONA kit immediately accessible
- ☐ **Plan B**
  - ☐ SAD insertion
  - ☐ Open eFONA kit
- ☐ **Plan C**
  - ☐ Final attempt at facemask ventilation
- ☐ **Plan D**
  - ☐ eFONA
- ☐ Any questions or concerns for team members?

This is an example checklist and should be adapted in line with institutional policies and procedures.

ATI, awake tracheal intubation; ETO2, end-tidal oxygen; HFNO, high-flow nasal oxygen; CPAP, continuous positive airways pressure; NIV, non-invasive ventilation; eFONA, emergency front-of-neck airway.

APPENDIX 3 - SCORING SYSTEMS TO PREDICT DIFFICULT INTUBATION

HEAVEN CRITERIA

- **Hypoxaemia:** Oxygen saturation value ≤ 93% at the time of initial laryngoscopy
- **Extremes of size:** Paediatric patient (≤8 years of age) or clinical obesity
- **Anatomic challenge:** Any structural abnormality that is anticipated to limit view
- **Vomit/blood/fluid:** Clinically significant fluid noted in the pharynx/hypopharynx
- **Exsanguination:** Suspected anaemia raising concerns about limiting safe apnoea times.
- **Neck mobility issues:** Limited cervical range of motion

MACOCHA SCORE

A higher score corresponds to a higher difficulty of intubation:

- **M**allampati Score III or IV : 5 points
- Obstructive Sleep **A**pneoa : 2 points
- Reduced Mobility of **C**ervical Spine : 1 point
- Limited Mouth **O**pening <3cm : 1 point
- **C**oma : 1 point
- Severe **H**ypoxaemia (<80%) : 1 point
- Non **A**naesthestist Intubator : 1 point

OTHER RESOURCES

DAS AirDrills Facilitator User Guide
DAS AirClips: Priming educational videos
DAS AirBites: Technical skill stations
Supplementary file "Human Factors considerations in Plans A-D', DAS guideline 2025"

ACKNOWLEDGEMENTS

The authors would like to thank Dr Jonathon Wong, Dr Maja Gavrilovski and Dr Klara de Baerdemaeker for their review and contributions.

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