

DAS VEMS AirDrills: Obstetric Unanticipated Difficult Airway

Based on DAS 2025 Guidelines for Unanticipated Difficult Tracheal Intubation (Plans A–D) and OAA/DAS 2015 Guidelines for Management of Difficult and Failed Intubation in Obstetrics.

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

Learners: Anaesthetists (all grades), airway assistants, midwifery and theatre teams

Facilitators: 1 - 2 Anaesthetic educator(s) / Airway Lead



1. OVERVIEW

Scenario: an emergency general anaesthetic induction for a Category 1 caesarean section in obstetrics develops into an **unanticipated failed intubation**. The focus is on decision-making, declaration, communication, and transition through the OAA/DAS 2015 and DAS 2025 algorithms. This AirDrill is designed to be performed as a **Visually Enhanced Mental Simulation (VEMS)** using the printable resources from the DAS Education Package.

The purpose of this AirDrill is not simply to rehearse the difficult airway algorithm, but to develop the judgement, communication and teamwork required to apply it effectively. By encouraging a shared mental model and timely transition between plans, the session aims to strengthen both **technical and non-technical skills** during one of the most time-critical emergencies in obstetric anaesthesia.

1. OBSTETRIC SPECIFIC CONSIDERATIONS

Airway management in obstetrics is associated with a higher risk of adverse events including failed intubation. This is due to a number of maternal, fetal, surgical and situational factors. These include maternal anatomical and physiological changes, such as increased upper airway vascularity and oedema, decreased functional residual capacity and increased oxygen requirement, increased gastric reflux and delayed gastric emptying. Fetal concerns often lead to expedited delivery with reduced preparation and planning. These are usually emergency situations and frequently occur out of hours. The 2015 OAA/DAS guidelines address the extreme urgency of the surgery being performed and consider the additional challenges of maternal airway management.

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3. SESSION STRUCTURE

The scenario below involves a **clinician** competent in airway management and a skilled **airway assistant**. Each section corresponds to a Plan (A–D) in the OAA/DAS 2015 algorithm with updates from 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 '**Facilitator's guide to DAS Air-Drills**' and the '**Demo videos**' on the DAS website for further information and guidance on how to run the VEMS session.

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 OAA/DAS 2015 and DAS 2025 guidelines. 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.

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5. BRIEF

- A patient is brought to the obstetric theatre for a Category 1 caesarean section with an ongoing fetal bradycardia. The obstetric team tell you that there is no time for a spinal. The maternal observations are all within normal range
- It is 10pm* and the Consultant Anaesthetist on call is at home*. The anaesthetic registrar covering theatres is currently in the middle of a case and cannot attend immediately.* [*Can change time and availability depending on team and contexts that would be most useful]
- Talk through with your team what you are going to do. Learners can ask for equipment, which will be given in the form of paper representations.
- Allow the learner to state anything they would do prior to commencing induction, e.g.
 - Pre-theatre preparation:
 - Airway assessment (including palpation of cricothyroid membrane and declaration of Plan D incision technique)
 - Fasting status
 - Antacid prophylaxis
 - Intrauterine fetal resuscitation if appropriate.
 - Plan with team:
 - WHO safety checklist/induction checklist
 - Delegate roles including monitoring, drugs, time-keeping
 - Identify senior help, alert if appropriate
 - Anticipate potential challenges and complications
 - Plan equipment for difficult/failed intubation
 - Plan for/discuss: wake up or proceed with surgery

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PLAN A – Tracheal Intubation



Scenario flow:



- **Pre-theatre preparation** conducted and **RSI planned with team**
- Attempts at **videolaryngoscopy** confirm a poor glottic view (Grade 3-4)
- Videolaryngoscopy attempts fail (max 2+1)

Facilitator prompts:



- Allow team to optimise (reducing/removing cricoid pressure, external laryngeal manipulation, repositioning head/neck, using bougie/stylet)
- Oxygen saturations maintained if peroxygenation achieved between attempts.

Discussion points:



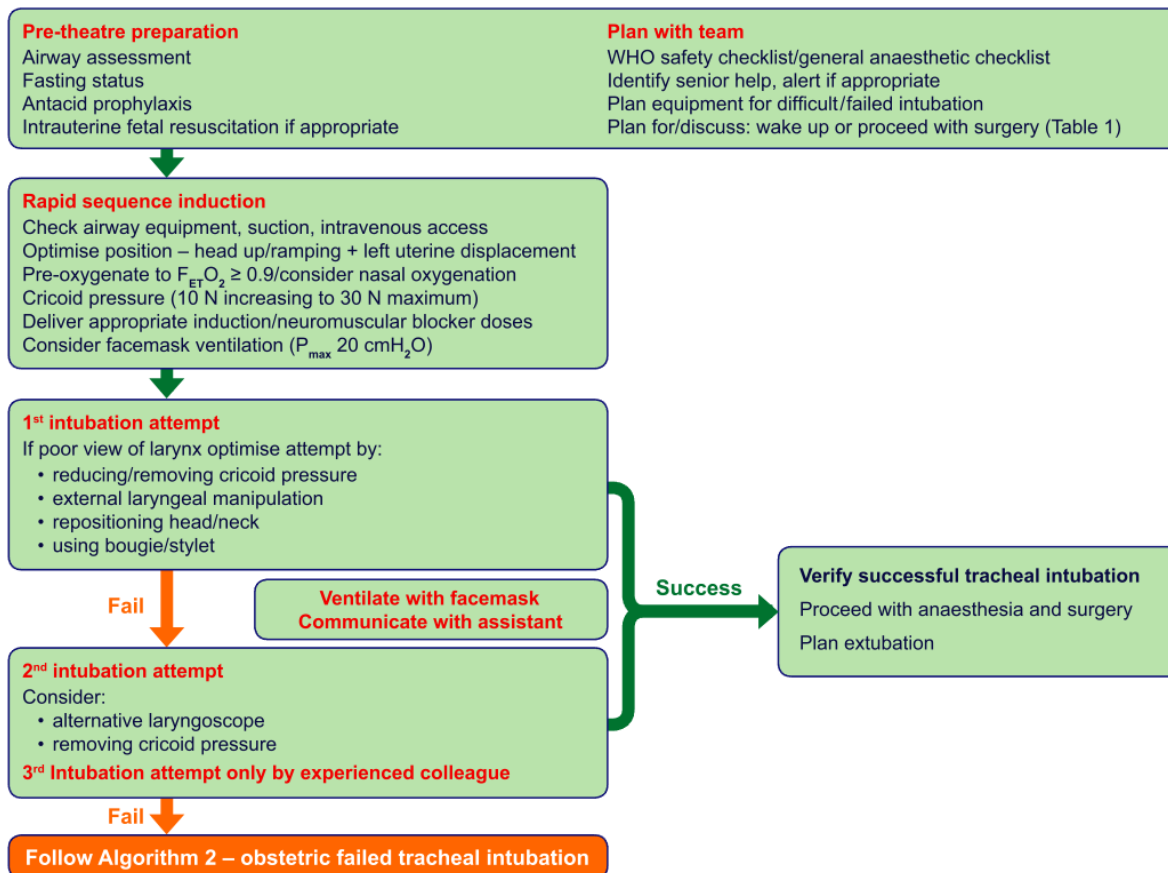
- **Preparation:** Did preparation include antacid prophylaxis? **HELP** pillow? Left uterine displacement? Communication with obstetric/midwifery/scrub team? Was a checklist completed? Discuss Plans A-D.
- **Leadership:** Who was leading - was it clear to team?
- **Assessment:** Anticipation and predictors of anatomical and physiological airway difficulty. Assess and identify cricothyroid membrane. Maternal resuscitation and intrauterine fetal resuscitation if appropriate (e.g. if bleeding/hypertensive/septic patient).
 - **Communication with obstetric and midwifery team:** Reassessment of obstetric urgency - has the indication for delivery changed after maternal stabilisation?
- **Early help-seeking:** Who would you ask for help? Who would make this call and how would you do it in this situation/context?
- **Technical reminders:**
 - Videolaryngoscopy should be used wherever possible
 - Max 2+1 attempts (can progress to Plan B/C at any point)
 - Optimisation between attempts and peroxygenation
 - Timely transitioning
 - Priming in parallel for emergency front-of-neck airway (eFONA)
- **Role of the airway assistant:** Prompting, monitoring, priming (getting eFONA kit)
- **Declaration:** "Failed intubation declared. Moving to Plan B/C"
- **Team challenge:** What if the intubator wanted to continue with a further intubation attempt?

Moving on



Options to replay scenario, or to continue to Plan B/C

Algorithm 1 – safe obstetric general anaesthesia



Scenario flow:



- **2nd generation SAD** insertion after failed intubation
- First attempt at SAD insertion fails; second succeeds with sustained ETCO₂

Facilitator prompts:



- Allow clinician to alternate between Plan B and Plan C as per OAA/DAS 2015 guidelines, but maximum 2 attempts at each
- Remove or reduce cricoid pressure
- Pause once effective oxygenation and sustained ETCO₂ achieved
- Allow team to **STOP, THINK AND COMMUNICATE** options – is it essential/safe to proceed with surgery immediately?
 - Communication with obstetric and midwifery team

Discussion points:



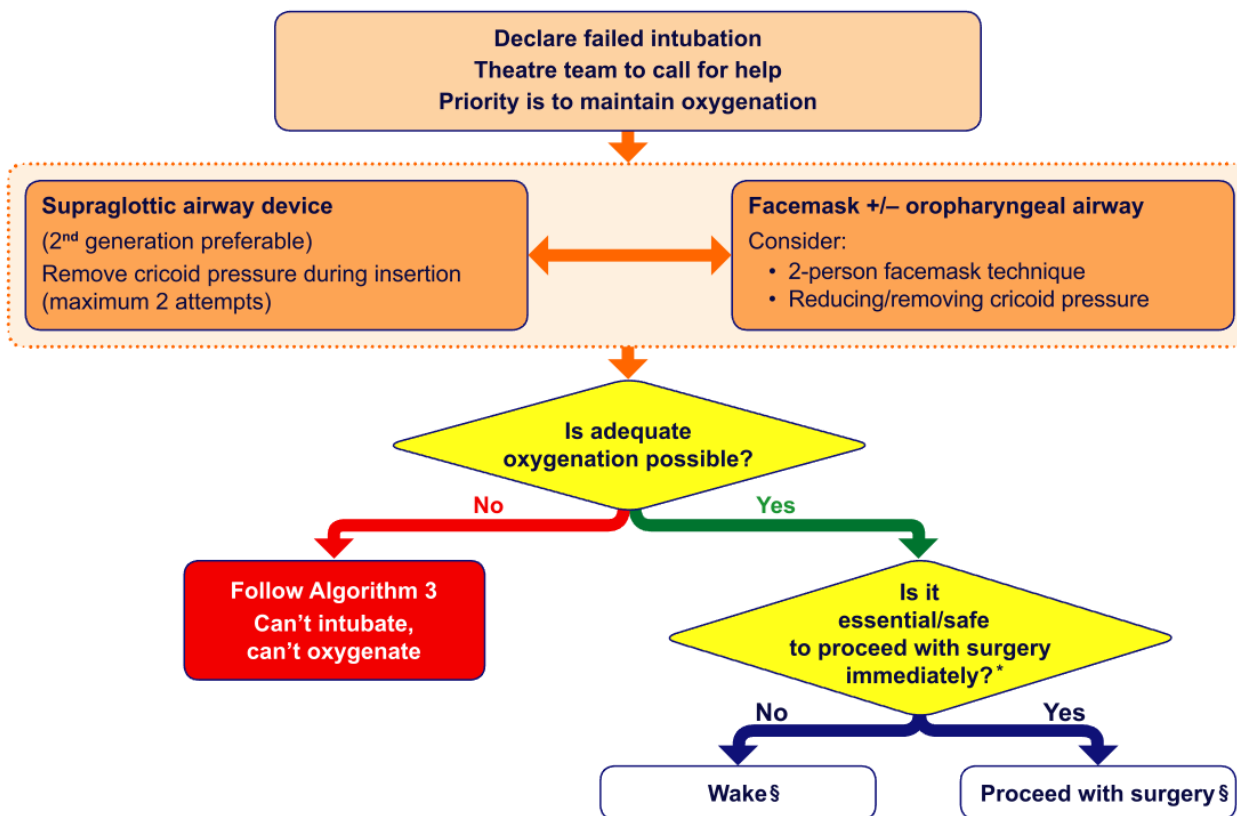
- **Decision making:** what factors need to be considered when deciding whether to wake or proceed with surgery? **Refer to the OAA/DAS chart for guidance.**
- **Technical reminders:**
 - Ensure adequate neuromuscular blockade
 - Optimise patient position
 - Use adjuncts for facemask ventilation
 - Two-person technique for facemask ventilation
 - Ensure adequate depth of anaesthesia
 - Timely transitioning
 - Priming in parallel for eFONA
- **Role of the airway assistant:** Prompting (optimisation strategies), monitoring, assisting with facemask ventilation; priming (opening eFONA kit)
- **Team communication:**
 - Closed-loop confirmations: “eFONA kit open and ready”.
 - Closed-loop confirmations: “eFONA kit open and ready”.
- **Preparation for eFONA:** Priming by opening the eFONA kit after failed SAD ventilation, verbally confirm cricothyroid technique, confirm paralysis.
- **Declaration:** “Can’t intubate, can’t oxygenate. Moving to Plan D”

Moving on



Options to replay scenario, change scenario to failed SAD insertion, failed facemask ventilation, or to continue to Plan D

Algorithm 2 – obstetric failed tracheal intubation



*See Table 1, §See Table 2

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Scenario flow:



Facilitator prompts:

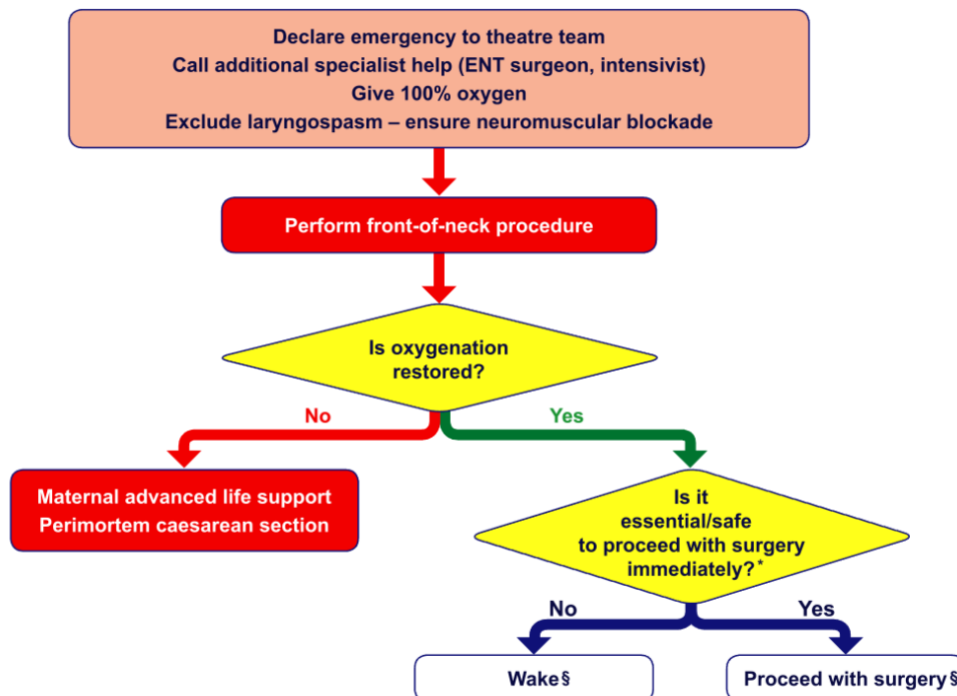


Discussion points:



- CICO declared; **perform eFONA** (learners talk through steps of eFONA)
- Discuss eFONA steps/method
- Reinforce leadership, role clarity, and calm communication
- Call additional specialist help (ENT surgeon, intensivist)
- 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"*
- **Communication:** Concise handover when help arrives: *"CICO declared, eFONA performed, size 6.0 tube in situ, sustained capnography waveform confirmed."*
- **Discussion points:**
 - Who should perform the eFONA? What if a senior anaesthetist arrives at this time?
 - What eFONA technique should be performed, if not previously confirmed?
 - Continuation of oxygen delivery (via SAD) during eFONA.
 - What would the next steps be in this situation? How would you decide if you need to proceed?

Algorithm 3 – can't intubate, can't oxygenate



*See Table 1, §See Table 2



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6. DEBRIEF THEMES

- **OAA/DAS 2015 guidelines and DAS 2025 guidelines:** obstetric specific considerations:
 - maximum 2+1 attempts at intubation
 - alternating between Plan B (2nd generation SAD) and Plan C (facemask ventilation)
 - maximum 2 attempts at SAD ventilation
 - decision aid to wake or proceed with surgery
 - management after failed tracheal intubation (see appendix)
- **Declaring failure and transition between plans:** explicitly declaring failure and verbalising transition to the next plan creates a shared mental model for the whole team and helps avoid task fixation.
- **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 additional anaesthetic help prior to induction.
- **Planning and communication:** communication with wider team including obstetric, midwifery and scrub teams:
 - ensure the use of an emergency tracheal intubation checklist
 - closed-loop communication
 - graded assertiveness (e.g. the use of graded assertiveness tools such as CUSS or PACE)
- **Non-technical skills:**
 - avoid task fixation
 - ensure timely transition between plans
 - display early priming for eFONA
 - maintain situational awareness
 - effective leadership.
- **Airway planning and strategy (Plan A):** including palpation of cricothyroid membrane and confirmation of eFONA technique based on assessment and verbalised to team.
- **Local department:** where is the equipment found? Who can be called for help?
- **Emotional impact:** encourage supportive debrief and psychological safety.

7. KEY TAKE-HOME MESSAGES

- Oxygenation takes priority over tracheal intubation.
- Early declaration of failure and timely transition between plans reduces fixation and support safe decision-making.
- Successful airway management depends on both technical and non-technical skills, including leadership, communication and teamwork

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OTHER RESOURCES

Other resources on Educational Package:

DAS AirDrills Facilitator User Guide

DAS AirBites: Technical and Non-Technical skill stations

DAS AirClips: Priming educational videos

Human Factors Infographic 'Human Factors in Airway Management -The Four Plans at a Glance, DAS guideline 2025'

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2. Ahmad I, El-Boghdady K, Iliff H, Dua G, Higgs A, Huntington M, et al. Difficult Airway Society 2025 guidelines for management of unanticipated difficult tracheal intubation in adults. *Br J Anaesth*. 2026;136(1):283-307. doi:10.1016/j.bja.2025.11.003.

FEEDBACK

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APPENDIX 1

Table 1: Proceed with Surgery? Criteria to be used in the decision to wake or proceed following failed tracheal intubation. OAA/DAS 2015 Guidelines for Management of Difficult and Failed Intubation in Obstetrics.

Factors to consider		← →				PROCEED
Before induction	Maternal condition	• No compromise	• Mild acute compromise	• Haemorrhage responsive to resuscitation		• Hypovolaemia requiring corrective surgery • Critical cardiac or respiratory compromise, cardiac arrest
	Fetal condition	• No compromise	• Compromise corrected with intrauterine resuscitation, pH < 7.2 but > 7.15	• Continuing fetal heart rate abnormality despite intrauterine resuscitation, pH < 7.15		• Sustained bradycardia • Fetal haemorrhage • Suspected uterine rupture
	Anaesthetist	• Novice	• Junior trainee	• Senior trainee		• Consultant/specialist
	Obesity	• Supermorbid	• Morbid	• Obese		• Normal
	Surgical factors	• Complex surgery or major haemorrhage anticipated	• Multiple uterine scars • Some surgical difficulties expected	• Single uterine scar		• No risk factors
	Aspiration risk	• Recent food	• No recent food • In labour • Opioids given • Antacids not given	• No recent food • In labour • Opioids not given • Antacids given		• Fasted • Not in labour • Antacids given
	Alternative anaesthesia • regional • securing airway awake	• No anticipated difficulty	• Predicted difficulty	• Relatively contraindicated		• Absolutely contraindicated or has failed • Surgery started
After failed intubation	Airway device/ventilation	• Difficult facemask ventilation • Front-of-neck	• Adequate facemask ventilation	• First generation supraglottic airway device		• Second generation supraglottic airway device
	Airway hazards	• Laryngeal oedema • Stridor	• Bleeding • Trauma	• Secretions		• None evident

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OAA

APPENDIX 2

Table 2: Management after failed tracheal intubation. OAA/DAS 2015 Guidelines for Management of Difficult and Failed Tracheal Intubation in Obstetrics

Table 2 – management after failed tracheal intubation	
Wake	Proceed with surgery
• Maintain oxygenation • Maintain cricoid pressure if not impeding ventilation • Either maintain head-up position or turn left lateral recumbent • If rocuronium used, reverse with sugammadex • Assess neuromuscular blockade and manage awareness if paralysis is prolonged • Anticipate laryngospasm / can't intubate, can't oxygenate	• Maintain anaesthesia • Maintain ventilation - consider merits of: □ controlled or spontaneous ventilation □ paralysis with rocuronium if sugammadex available • Anticipate laryngospasm / can't intubate, can't oxygenate • Minimise aspiration risk: □ maintain cricoid pressure until delivery (if not impeding ventilation) □ after delivery maintain vigilance and reapply cricoid pressure if signs of regurgitation □ empty stomach with gastric drain tube if using second-generation supraglottic airway device □ minimise fundal pressure □ administer H₂ receptor blocker i.v. if not already given • Senior obstetrician to operate • Inform neonatal team about failed intubation • Consider total intravenous anaesthesia
After waking	
• Review urgency of surgery with obstetric team • Intrauterine fetal resuscitation as appropriate • For repeat anaesthesia, manage with two anaesthetists • Anaesthetic options: □ Regional anaesthesia preferably inserted in lateral position □ Secure airway awake before repeat general anaesthesia	



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APPENDIX 3

Plan D Algorithm. DAS 2025 Guidelines for Unanticipated Difficult Tracheal Intubation

