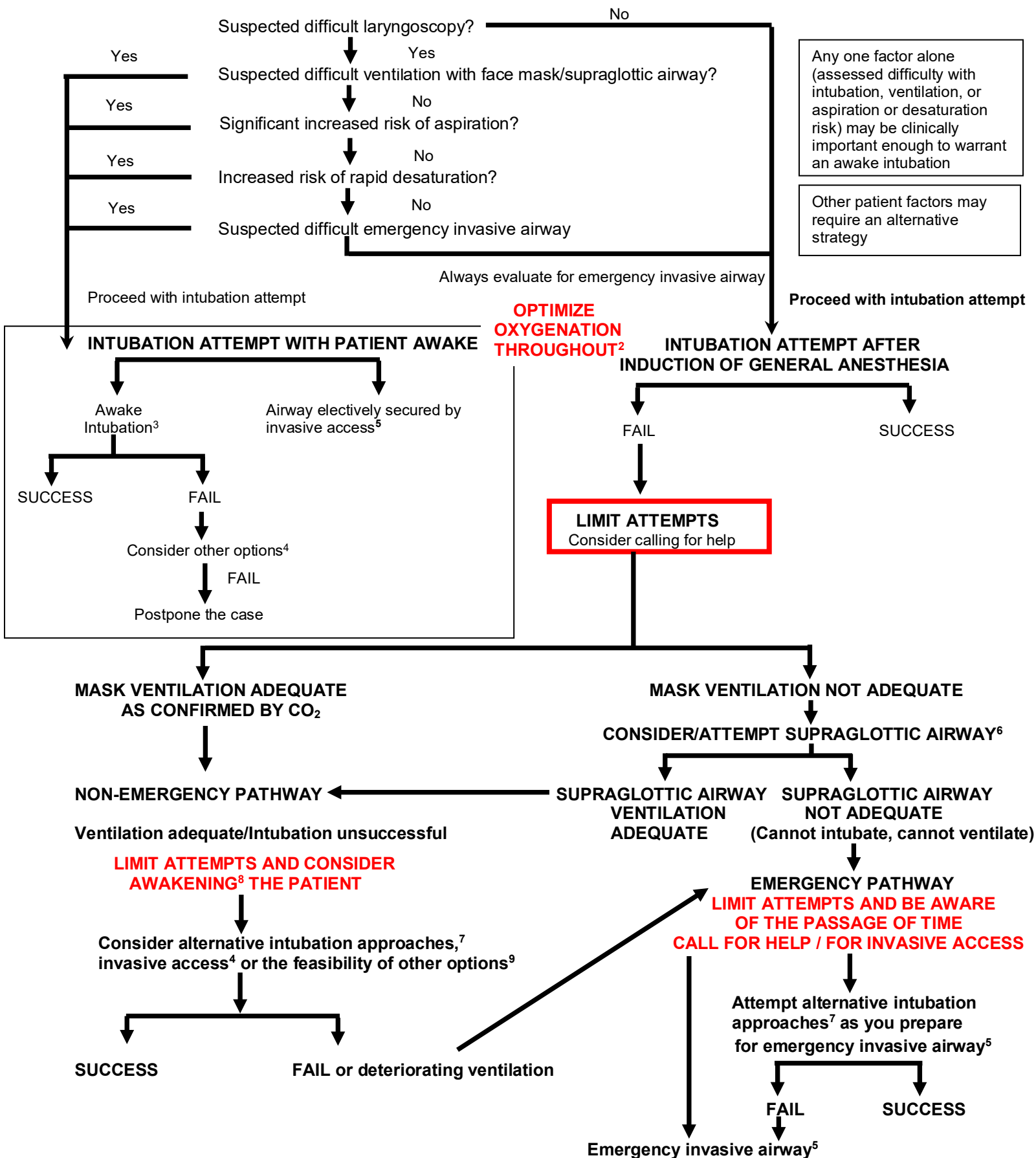


Figure 1: ASA Difficult Airway Algorithm – Adult Patients

Pre-Intubation: Before attempting intubation, choose between either an awake or post-induction airway strategy. Choice of strategy and technique should be made by the clinician managing the airway.¹

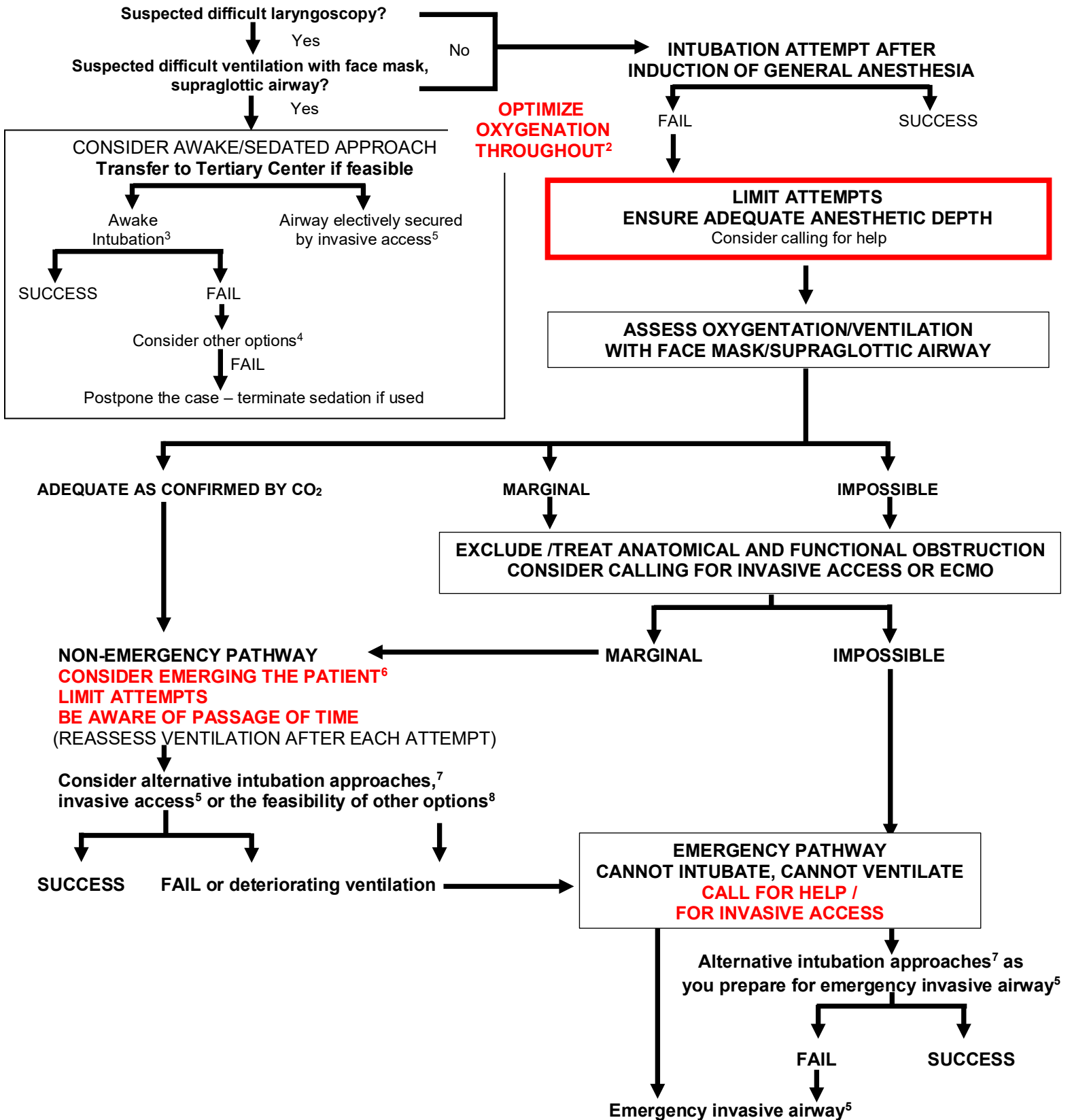


Footnotes:

1. The airway manager's choice of airway strategy and techniques should be based on their prior experience, available resources, including equipment, availability and competency of help, and the context in which airway management will occur.
2. Low or high flow nasal cannula, head elevated position throughout procedure. Non-invasive ventilation during preoxygenation.
3. Awake intubation techniques include flexible bronchoscope, videolaryngoscopy, direct laryngoscopy, combined techniques, and retrograde-wire aided intubation
4. Other options include, but are not limited to:
 - Alternative awake technique
 - Awake elective invasive airway
 - Alternative anesthetic techniques
 - Induction of anesthesia (if unstable or can't be postponed) with preparations for emergency invasive airway
 - Postpone the case without attempting the above options
5. Invasive airway techniques include: surgical cricothyrotomy, needle cricothyrotomy with a pressure regulated device, large bore cannula cricothyrotomy or surgical tracheostomy. Elective invasive airway techniques include the above and retrograde wire guided intubation and percutaneous tracheostomy. Also consider rigid bronchoscopy and Extracorporeal Membrane Oxygenation.
6. Consideration of size, design, positioning, and 1st vs 2nd generation supraglottic airways may improve the ability to ventilate.
7. Alternative difficult intubation approaches include but are not limited to: video-assisted laryngoscopy, alternative laryngoscope blades, combined techniques, intubating supraglottic airway (with or without flexible bronchoscopic guidance), flexible bronchoscopy, introducer, and lighted stylet or lightwand. Adjuncts that may be employed during intubation attempts include tracheal tube introducers, rigid stylets, intubating stylets, or tube changers and external laryngeal manipulation.
8. Includes postponing the case or postponing the intubation and returning with appropriate resources (e.g. personnel, equipment, patient preparation, awake intubation)
9. Other options include but are not limited to: proceeding with procedure utilizing face mask or supraglottic airway ventilation. Pursuit of these options usually implies that ventilation will not be problematic.

Figure 2: Difficult Airway Algorithm – Pediatric Patients*

Pre-Intubation: Before attempting intubation, choose between either an awake or post-induction airway strategy. Choice of strategy and technique should be made by the clinician managing the airway.¹



Footnotes:

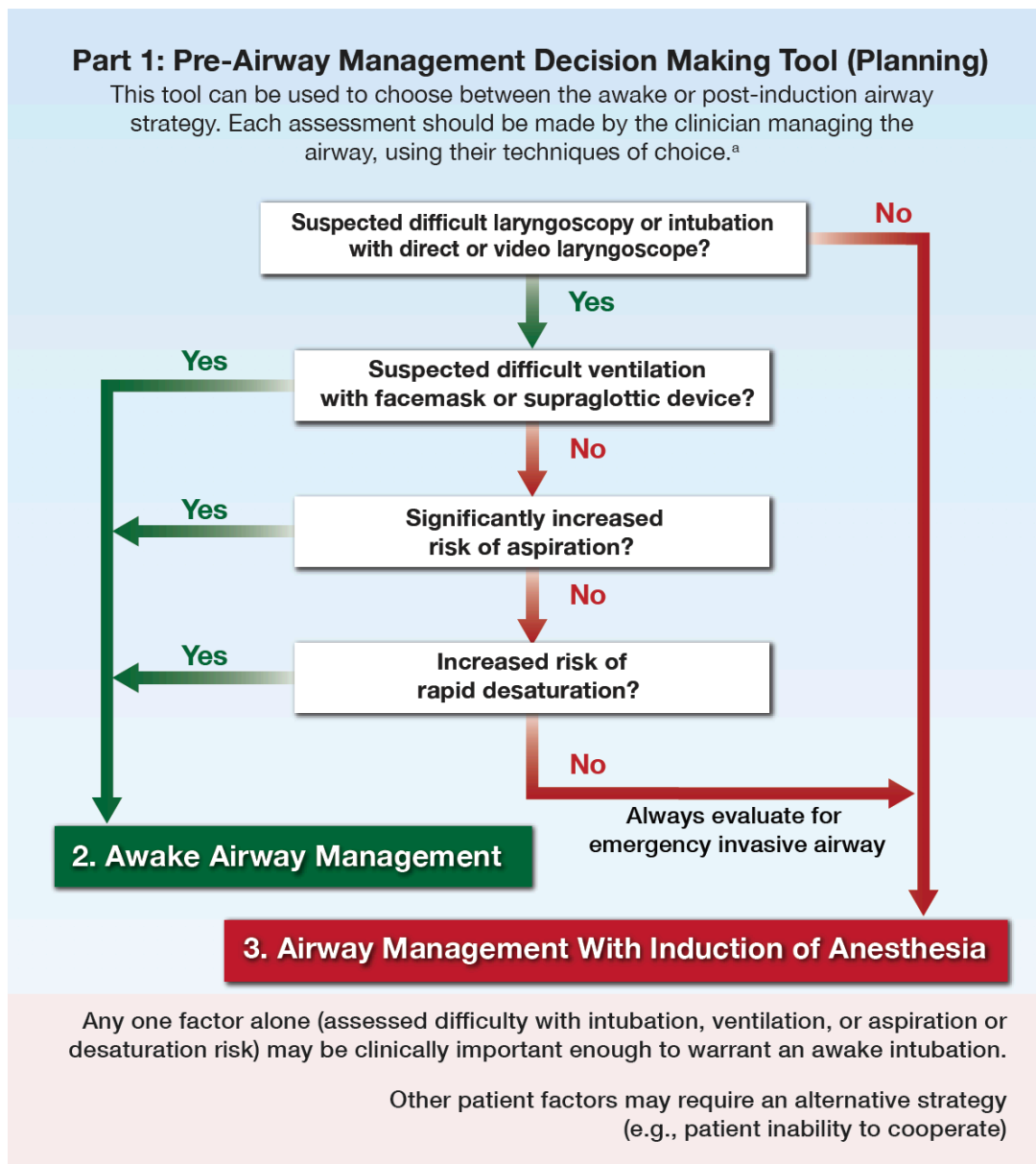
1. The airway manager's assessment and choice of techniques should be based on their prior experience, available resources, including equipment, availability and competency of help, and the context in which airway management will occur.
2. Low or high flow nasal cannula, head elevated position throughout procedure. Non-invasive ventilation during preoxygenation.
3. Awake intubation techniques include flexible bronchoscope, videolaryngoscopy, direct laryngoscopy, combined techniques, and retrograde-wire aided intubation
4. Other options include, but are not limited to:
 - Alternative awake technique
 - Awake elective invasive airway
 - Alternative anesthetic techniques
 - Induction of anesthesia (if unstable or can't be postponed) with preparations for emergency invasive airway
 - Postpone the case without attempting the above options
5. Invasive airway techniques include: surgical cricothyroidotomy, needle cricothyroidotomy if age appropriate with a pressure regulated device, large bore cannula cricothyroidotomy or surgical tracheostomy. Elective invasive airway techniques include the above and retrograde wire guided intubation and percutaneous tracheostomy. Also consider rigid bronchoscopy and Extracorporeal Membrane Oxygenation.
6. Includes postponing the case or postponing the intubation and returning with appropriate resources (*e.g.* personnel, equipment, patient preparation, awake intubation)
7. Alternative difficult intubation approaches include but are not limited to: video-assisted laryngoscopy, alternative laryngoscope blades, combined techniques, intubating supraglottic airway (with or without flexible bronchoscopic guidance), flexible bronchoscopy, introducer, and lighted stylet. Adjuncts that may be employed during intubation attempts include tracheal tube introducers, rigid stylets, intubating stylets, or tube changers and external laryngeal manipulation.
8. Other options include but are not limited to: proceeding with procedure utilizing face mask or supraglottic airway ventilation. Pursuit of these options usually implies that ventilation will not be problematic.

Title Caption:

* Developed in collaboration with the Society for Pediatric Anesthesia and the Pediatric Difficult Intubation Collaborative: John E. Fiadjoe, M.D., Thomas Engelhardt, MD, PhD, FRCA, Nicola Disma, MD, Narasimhan Jagannathan, MD, MBA, Britta S von Ungern-Sternberg, MD, PhD, DEAA, FANZCA, and [Pete G. Kovatsis, MD, FAAP](#)

Figure 3: Difficult Airway Management Infographic – Adult Patients

Figure 3 provides three tools to aid in airway management for the patient with a planned, anticipated difficult, or unanticipated difficult airway. **Part 1** is a decision tool that incorporates relevant elements of evaluation and is intended to assist in the decision to enter the Awake Airway Management pathway or the Airway Management with the Induction of Anesthesia pathway of the ASA difficult airway algorithm. **Part 2** is an awake intubation algorithm. **Part 3** is a strategy for managing patients with induction of anesthesia when unanticipated difficulty with ventilation (as determined by capnography) with a planned airway technique is encountered.



Part 2: Awake Airway Management

Review strategy for awake airway management ^{a,b}

Awake technique

Elective invasive airway ^{f,g}

Success confirmed by
adequate ventilation ^c

Fail to establish
secure airway

Awake non-emergency pathway ^d

Postpone ^e or consider risks and benefits of

- Alternative awake technique ^b
- Awake elective invasive airway ^{f,g}
- Alternative anesthetic techniques
- Induction of anesthesia (if unstable or can't be postponed) with preparations for emergency invasive airway ^{f,g,h}

Deliver oxygen / optimize oxygenation ⁱ

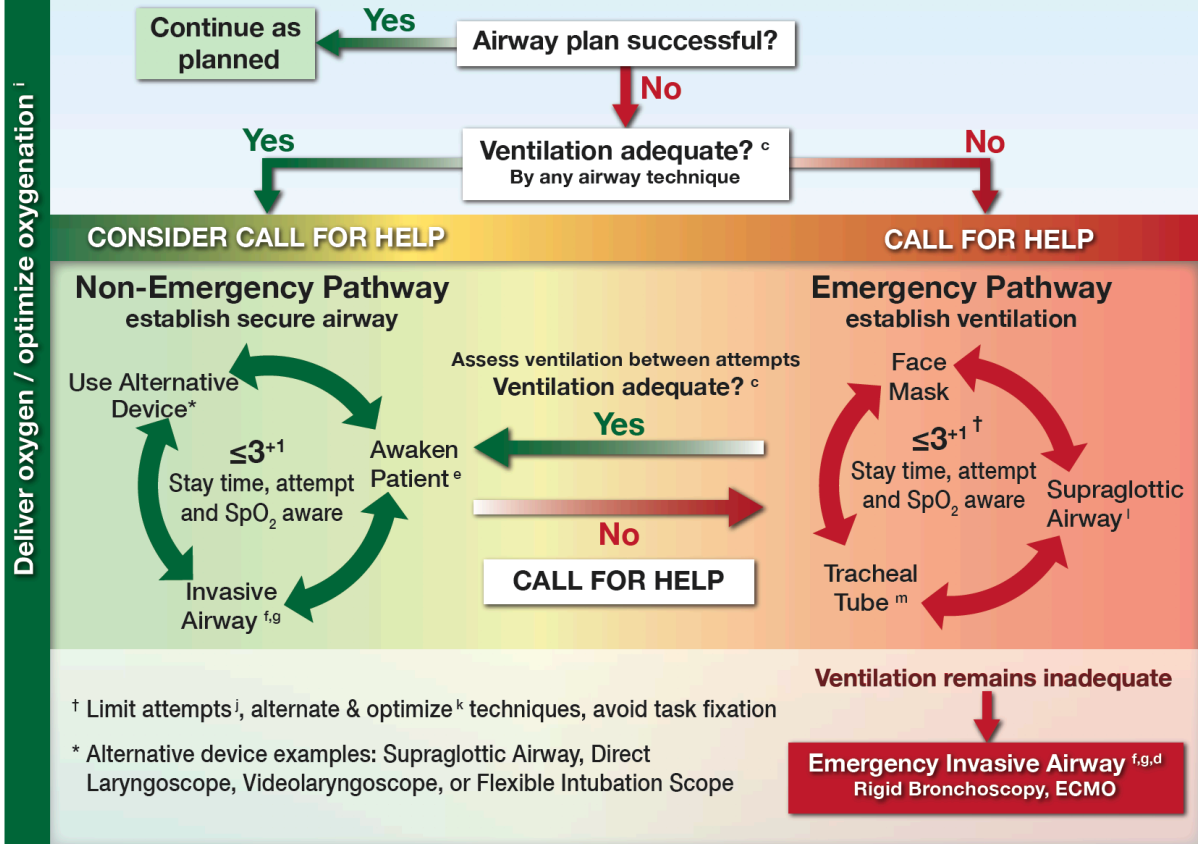
Consider call for help

Call for help

Part 3: Airway Management With Induction of Anesthesia

Review airway management strategy ^{a,b}

Preoxygenate and induce anesthesia



Footnotes

^a The airway manager's assessment and choice of techniques should be based on their prior experience, available resources, including equipment, availability and competency of help, and the context in which airway management will occur.

^b **Review airway strategy:** consider anatomical / physiological airway difficulty risk, aspiration risk, infection risk, other exposure risk, equipment and monitoring check, role assignment, back-up and rescue plans. **Awake techniques include** flexible intubation scope, videolaryngoscopy, direct laryngoscopy, supraglottic airway, combined devices, retrograde-wire aided.

^c **Adequate ventilation** by any means (e.g., face mask, supraglottic airway, tracheal intubation) should be confirmed by capnography, when possible.

^d **Follow-up care** includes post-extubation care (i.e., steroids, racemic epinephrine), counseling, documentation, team debriefing, encourage patient difficult airway registry.

^e **Postpone the case / intubation** - Return with appropriate resources (e.g. personnel, equipment, patient preparation, awake intubation).

^f **Invasive airways** include: surgical cricothyroidotomy, needle cricothyroidotomy with a pressure regulated device, large bore cannula cricothyroidotomy or surgical tracheostomy. Elective invasive airways include the above and retrograde wire guided intubation, and percutaneous tracheostomy. Other options include rigid bronchoscopy and Extracorporeal Membrane Oxygenation.

^g Invasive airway is performed by an individual trained in invasive airway techniques, whenever possible.

^h In an unstable situation, or when airway management is mandatory after a failed awake intubation, a switch to the Airway Management with Induction of Anesthesia pathway may be entered with preparations for an emergency invasive airway.

ⁱ Low or high flow nasal cannula, head elevated position throughout procedure. Non-invasive ventilation during pre-oxygenation.

^j The intent of limiting attempts at tracheal intubation and supraglottic airway insertion is to reduce the risk of bleeding, edema, and other types of trauma that may increase the difficulty of mask ventilation and/or subsequent attempts to secure a definitive airway. Persistent attempts at any airway intervention, including ineffective mask ventilation, may delay obtaining an emergency invasive airway. A reasonable approach may be to limit attempts with any technique class (i.e., face mask, supraglottic airway, tracheal tube) to 3, with 1 additional attempt by a clinician with higher skills.

^k **Optimize:** suction, relaxants, repositioning, **Face mask:** oral/nasal airway, two hand mask grip. **Supraglottic airway:** size, design, repositioning, 1st vs 2nd generation. **Tracheal tube:** introducer, rigid stylet, hyperangulated videolaryngoscopy, blade size, external laryngeal