Adequacy of difficult airway requirement audit

Please check with your local ethics service or governing body as to the process requirements for conducting an audit of your own practice.

| Background | Difficult airway (DA) scenarios and airway complications are a leading cause of anaesthetic morbidity and mortality.1,2,3

The UK’s NAP4 results and the review from the American Society of Anesthesiologists closed claims database analysis suggest many of these cases are preventable.1

Expertise in airway management, including that of a difficult airway, is an essential skill for anaesthetists. In the event of an unanticipated difficult airway or airway complication, the effective management of a difficult airway depends on essential equipment being rapidly available.

Airway complications can occur during all phases of the anaesthetic process. NAP4 demonstrated that while induction was the phase when most events occur, a significant minority occurred during emergence and in (or during transfer to) the recovery area. This illustrates the need for a DA trolley to be easily accessible in all areas of a complex that provides anaesthesia and recovery/post anaesthesia care.

Several algorithms and flowcharts have been formulated by various bodies such as the American Society of Anesthesiologists (ASA), the UK’s Difficult Airway Society (DAS) and more recently in Australia, the “Vortex Approach”, to effectively manage the difficult airway as well as the “can’t intubate and can’t ventilate” situation.4,5,6

The Australian Incident Monitoring Study (AIMS) identified equipment deficiencies, which were mainly due to failure to check, as responsible for a third of the contributing factors identified in the difficult intubation reports.7

An audit in New Zealand identified inconsistencies and deficiencies in the airway equipment available in a major metropolitan area and the UK, there is evidence that the location and contents of DA equipment is poor.8

In 2012 ANZCA developed evidence based guidelines on equipment to manage a difficult airway during anaesthesia (PS56) which specifies essential equipment for management of a difficult airway as well as its storage and location.9

Essential equipment should include simple airway adjuncts, intubation equipment, supraglottic ventilation devices and an emergency cricothyrotomy oxygenation system.9,10,11

| Aim and objectives | To identify areas of potential deficiency in the existence of, locations for, labelling and/ or contents of Difficult Airway (DA) Trolleys in various departments where general anaesthesia occurs.

To improve, where possible, the contents of and access to difficult airway equipment.

Improvement in the speed of access to and ease of locating equipment within a DA trolley in an emergency could reduce morbidity and mortality relating to difficult airway management. |
| Research evidence/best practice | ANZCA background paper on PS56 recommends that a carefully selected range of equipment is essential for successful and safe patient outcomes. This equipment needs to be checked, in good working order and readily available to hand. There is no magical device or technique that will be suitable for all airway problems, so therefore a range of equipment is required.\textsuperscript{12}  
The DAS website has recommended equipment lists to go with its algorithms.\textsuperscript{5}  
The UK’s Royal College of Anaesthetists ‘Guidelines for the provision of anaesthetic services’ refer to a need for specialist airway equipment and state ‘within each theatre suite, there must be at least one portable storage unit with specialised equipment for managing the difficult airway.’\textsuperscript{13}  
The NAP4 Executive Summary recommended that national standardisation of Advanced Airway trolleys should be given consideration and that each hospital should ensure a minimum level of airway equipment for all sites where airway management may be performed.\textsuperscript{1} |
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| Suggested indicators | • Existence of a named consultant responsible for the DA set.  
• Immediate availability of a DA set in all areas where anaesthesia is administered, which includes a list of contents and an algorithm flowchart of advanced airway management.  
• Each cart is laid out in a simple, structured manner with labelled drawers and including airway adjuncts, intubation kit, supraglottic ventilation devices and emergency cricothyrotomy kit (including oxygen delivery).  
• There is documentation of regular maintenance and stocking of each DA set. |
| Standards and criteria for best practice | • A named consultant should be responsible for the DA set.  
• 100% DA trolley should have a simple layout with labelled drawers, a list of contents and an algorithm flowchart of advanced airway management.  
• 100% DA trolleys should include all equipment included on the trolley contents list.  
• 100% DA trolleys should include evidence of regular maintenance. |
| Method | Each hospital or practice determines the suitable contents of the DA trolley and creates a list of contents. Each trolley should be assessed as to whether it contains the equipment as detailed on the contents list, that essential equipment is on the trolley and that there is evidence of regular maintenance. A consultant should be responsible for ensuring DA trolleys are suitably stocked and equipment replaced when used. |
| 11. | Heard AMB, Green RJ, Eakins P. The formulation and introduction of a ‘can't intubate, can't ventilate” algorithm into clinical practice. Anaesthesia; 2009, 64: 601-608 |
| 12. | Australian and New Zealand College of Anaesthetists (ANZCA) Guidelines on Equipment to Manage a Difficult Airway During Anaesthesia :Background Paper PS56BP |

**Acknowledgement**

This audit guide is adapted from Macguire, B. ‘Adequacy and location of advanced airway equipment’ In: Royal College of Anaesthetists. *Raising the Standard: a compendium of audit recipes*, 2012; p.92-93.

The Royal College has kindly granted ANZCA permission to use this material.

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**Associated documents:**

Adequacy of Difficult Airway Equipment Data Collection Form

Adequacy of Difficult Airway Equipment Results Summary & Conclusions Form