

BREATHE EASY.

A Comprehensive Audit of Difficult Airway Trolley Compliance Across Victoria

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BACKGROUND

Difficult Airway Trolley (DAT) availability in operating theatres enhances patient safety, particularly in the event of an unforeseen airway crisis [1]. The Australian and New Zealand College of Anaesthetists (ANZCA) recommends its presence in all theatre locations. Given that equipment-related problems contribute to approximately 24% of airway complications, it is imperative that DATs are organised in a coherent and practical manner [2]. This facilitates adherence to difficult airway algorithms in high-stress situations with heightened cognitive demand. In 2021 ANZCA released updated guidelines designed to "standardise and simplify the choice of difficult airway equipment to enhance familiarity" [3]. We conducted a DAT audit to evaluate the compliance of Victorian hospitals to these guidelines. This study is the most comprehensive published survey of the DAT within Australia, with a high response rate (>90%) and inclusion of 24 hospitals from within Victoria.

AIMS & METHOD

This study had 4 primary aims:

1. To identify the availability and accessibility of DATs in the OR, ED and ICU settings
2. To evaluate the compliance with content and key design aspects of the updated PG56 documentation within the DATs within ORs
3. To identify areas of heterogeneity of DATs within ORs across health services
4. To assess standardisation of the DATs between the three critical care departments within the same health services.

A prospective questionnaire with 168 data points was designed to audit DATs based on the recommendations by ANZCA. This audit was sent to members of the Victoria's ANZCA Airway Leads Committee, comprised of members from major Victorian hospitals (including private and public hospitals as well as metropolitan and rural). Participation was strictly voluntary. The audit responses were exported and statistical analysis was conducted.

RESULTS

- This study identified that 100% of operating theatres, emergency departments, and intensive care units contained DATs
- The average compliance rate of DAT's design and content features to the ANZCA guidelines was reasonably high at 68.3%
- Most items with a poor rate of storage were ancillary equipment (that is ubiquitous in the OR environment), such as scissors (24%), syringes (35%) and surgical tape (43%). One exception is the neonatal face mask, recommended for ventilation of the tracheostomy stoma, where the carriage rate was only 25%.
- Variations in DAT's design features and equipment were evident both across hospitals and within the same hospital between different clinical areas
- Differences in the brands of supraglottic airway devices and videolaryngoscopes were identified
- Surprisingly low carriage rates were reported for oropharyngeal airway sizes 7 - 11 (71.4%), facemasks of all sizes (61%) and videolaryngoscope blades (66.6%)
- Disappointingly, difficult airway letters were especially underutilised, with just a 5% carriage rate demonstrated

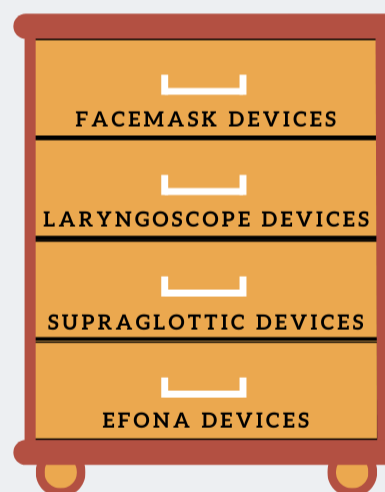


FIGURE 1: Most common DAT drawer order. Essential airway devices were largely categorized into (1) Facemask devices, (2) Laryngoscopy devices, (3) Supraglottic devices and (4) eFONA devices. Excluding drawers which contained 'other equipment and adjuncts', facemasks devices were located on the highest draw in 100% of trolleys and eFONA in the lowest drawer in 92.9% of trolleys. The order of laryngoscopy and supraglottic airway equipment had the greatest variation with laryngoscopy equipment being in a higher draw than supraglottic airway devices in 64.3% of trolleys

CONCLUSION

Significant improvements in compliance with DAT recommendations were found given that less than ten years ago, only 43% of audited sites had a dedicated DAT [4]. However, whilst the compliance rate of DAT features to ANZCA guidelines was reasonable, there is still variations of DATs both within the same hospital and importantly across different hospitals. Homogeneity of DATs is of particular importance given that many anaesthetists and anaesthesia trainees in Australia work across multiple institutions. The findings from this audit underscore the necessity for ongoing efforts to enhance DAT standardisation. Implementation of guideline-based strategies to standardise DATs will ensure optimal standards of care, allowing for both patients and clinicians to ultimately breathe easy.

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