What We All Should Know About Our Patient's Airway

Difficult Airway Communications, Database Registries, and Reporting Systems Registries

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KEYWORDS

- Difficult airway letter • Airway documentation • Patient notification
- Airway registries • Airway databases • Hospital information systems
- MedicAlert national difficult airway/intubation registry

KEY POINTS

- The American Society of Anesthesiologists, Canadian Airway Focus Group Difficult Airway Society, the Society for Airway Management, and other international airway societies recommend the following steps for disseminating difficult airway information: (1) a written report or letter for the patient, (2) a report to the medical record, (3) a chart flag, (4) communication with the patient's surgeon or primary caregiver, and (5) a notification bracelet or equivalent identification device.
- Institutions would be well served to create in-house difficult airway alerts, standardized airway documentation, airway registries, and "Dear Patient" difficult airway letters.
- Hospital policies regarding sedation and out-of-operating room intubation and extubation should be adapted to include safeguards for patients with documented difficult airways.

INTRODUCTION

All airway practitioners encounter a difficult airway, and likely encounter a failed airway, during their career. The consequences of failed airway maintenance and endotracheal intubation are devastating to the patient, the practitioner, and the health care system.[1] Complex airway management is a multifaceted problem involving health care providers in a variety of clinical settings. Although a large percentage of difficult intubations can be predicted via a careful review of history and airway examination,

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unanticipated difficult airways are still reported at a rate of 1% to 3% among hospitalized operative patients.[2–5] Since Cooper's classic 1978 paper on human errors, anesthesiology has made great strides to reduce preventable harm.[6] A history of a difficult airway and its recognition as a risk factor for future airway management has been helpful in the mitigation of risk in the clinical management of the difficult airway patient.[7,8] Additionally, technology and new devices have improved anesthesiologists' ability to secure airways. Remaining difficulties include the cryptic anatomy encounter or other anatomic barriers to airway maintenance that were not communicated. Thus, a new "human error" of airway safety is poor forward information transmission. The critical data lacking often include identification of such patients along with the complete documentation of airway management techniques that failed and those that were successful. The effective and efficient dissemination of this critical airway information to health care providers and patients is the current task set to our interdisciplinary professions.

Whereas the patient's difficult airway was most likely first made evident in the setting of an operating room, subsequent events could occur in a variety of settings (even in the home or in public places) and involve physician or nonphysician providers, such as paramedics, emergency room physicians, physicians of other specialties (eg, otolaryngology), certified registered nurse anesthetists, and/or anesthesiologists. Therefore, it is incumbent on airway physicians to make every effort to identify difficult airway patients in and out of the operating room and transmit this knowledge in widely accessible forms using terminology that is directed toward other airway specialists, health care providers, and patients or laypersons. The fundamental differences between the successful management of known versus unanticipated difficult airways are clearly seen in the enhanced patient outcomes observed in the former scenario.[2,9,10]

Currently, numerous difficult airway communication reporting mechanisms exist, including airway databases and registries, although the field is migrating from a nascent stage toward a more nationally and internationally integrated stage. This transition is nonetheless still characterized by many competing elements, fractured systems, and diverse goals. We present a taxonomy of difficult airway databases, registries, and clinical practices that have been successfully implemented.

CURRENT DIFFICULT AIRWAY DATABASES

Systems in Place

There are two major goals of difficult airway databases: to identify specific patients for their protection and to improve their future care; and to collect data to learn about the epidemiology and cause of difficult airways to improve systems of care and clinical practice. Based on these goals, there are three types of difficult airway databases: (1) patient protective difficult airway database; (2) epidemiologic and etiologic difficult airway database; and (3) combined patient protective, epidemiologic, and etiologic difficult airway database. The first two accomplish one, but not both of the aforementioned goals as would be the ideal (**Fig. 1**). Other important features include the time frame (either time limited or perpetual) and accessibility for data reporting and retrieval. Data reporting can be restricted to predetermined institutions and patients or may be broadened to include global data reporting and retrieval. The data elements that are collected obviously determine the use of that databank. For incidence and prevalence calculations, the denominator of the total number of airway management occurrences is needed and the numerator of untoward airway events. To illustrate this taxonomy of difficult airway database, we have reviewed and analyzed multiple examples, highlighting their strengths and weaknesses. The databases are grouped