The Airway Alert: A Multi-Disciplinary Approach to Management of The Difficult Airway

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Carilion Roanoke Memorial Hospital is Carilion Clinic's flagship hospital. It is an 850-bed, tertiary referral center with a one million-patient catchment area and a Level I Trauma Center.

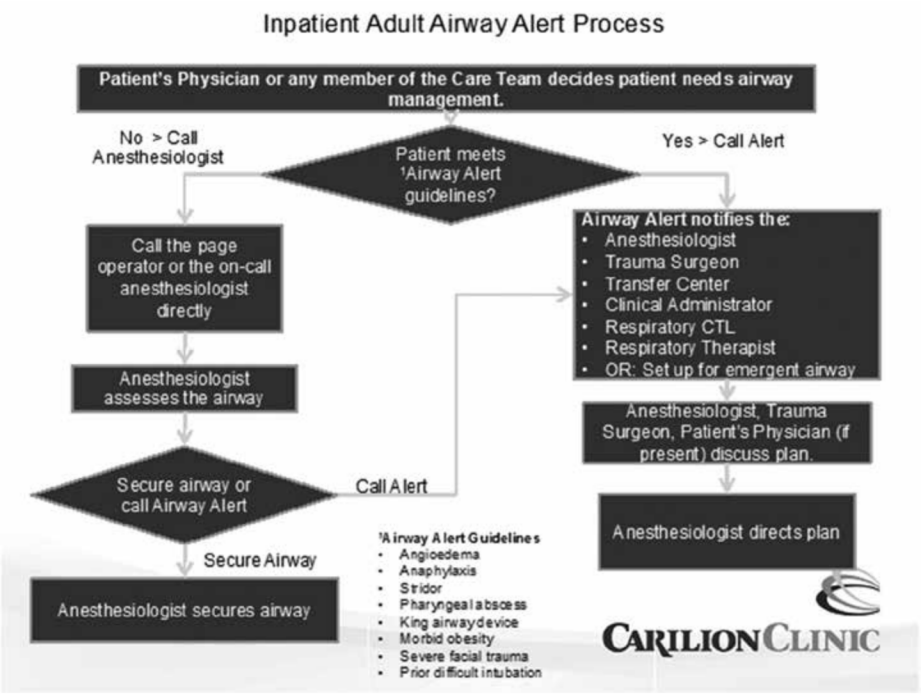
As such, it gets its fair share of bad airways – trauma, angioedema, morbid obesity, head and neck cancers, etc.

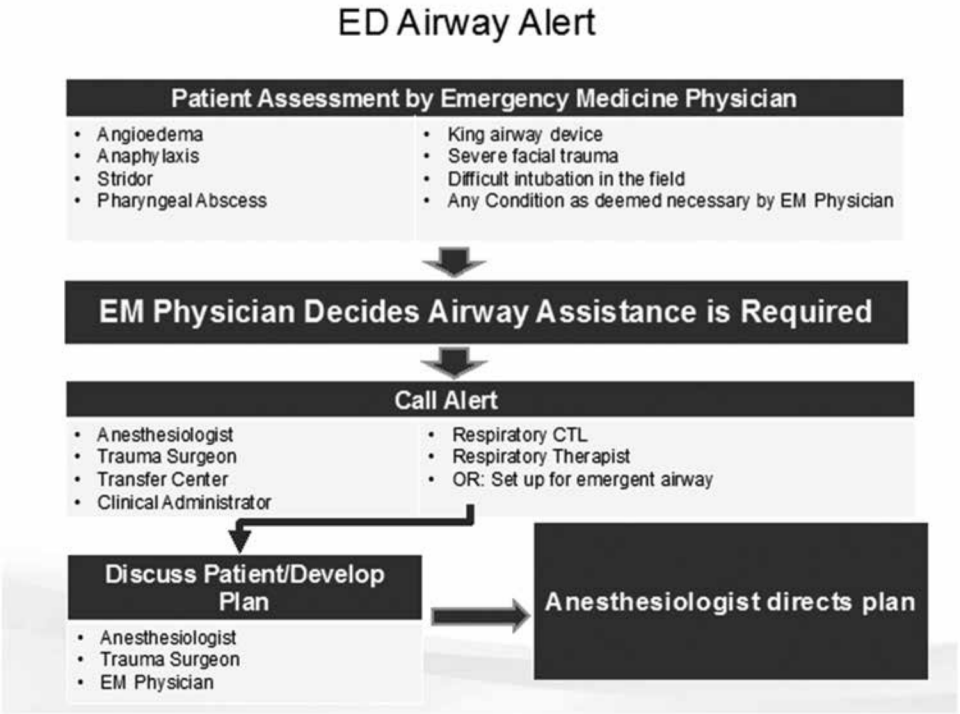
Airway management is performed by various specialties throughout the hospital. Intubations in the ED are performed by the EM physicians. Intubations in the in-patient setting, in addition to anesthesiologists, are performed by various services with variable levels of expertise in difficult airway management.

Prior to developing an Airway Alert protocol, there was no formal process in place to facilitate communication and care management between disciplines in these high risk and time sensitive situations. With this in mind, an Airway Alert process was developed in order to address the complexity of a patient in acute respiratory distress who could potentially require an emergent surgical airway.

The Airway Alert process, modeled after our Code Blue process, quickly brings personnel and resources to the patient with a difficult airway and facilitates safe and efficient care.

I was Vice President for Medical Affairs (VPMA) when I initiated the project. As a member of the ASA's Society for Airway Management, I became aware of other institutions that had established an Airway Alert or Code Airway process and realized that our patients would also benefit. Dr. Aaron Joffe from The University of Washington, Seattle provided a wealth of information gained from his institution.





Development of an Airway Alert involves buy-in and collaboration across multiple specialties and our first step was to establish a multidisciplinary Airway Committee that met monthly for approximately 18 months. As VPMA, I represented the hospital's administration; other participants represented Anesthesiology, Emergency Medicine, ENT, Critical Care Medicine, Trauma Surgery,

Continued on page 15

Nursing, Respiratory Therapy and thankfully, a Performance Improvement Process Engineer was also involved.

Involving all stakeholders was important so they can fully participate and have their concerns addressed and met. For example, the emergency medicine physicians raised concerns that the anesthesiologists would "swoop in" to manage these difficult airways and disallow participation by the EM residents.

In response, the anesthesiologists agreed to allow participation from the EM residents as much as was possible. Another concern focused on the disposition of the patient with a difficult airway who presented through the ED and was brought to the OR for airway management. Would critical care medicine be willing to admit these patients such that they need not return intubated to the ED or remain in the PACU?

The committee's work focused on developing criteria by which patients might be identified as an Airway Alert. Pathways of care for patients with difficult airways were discussed for patients presenting through the ED and for in-patients.

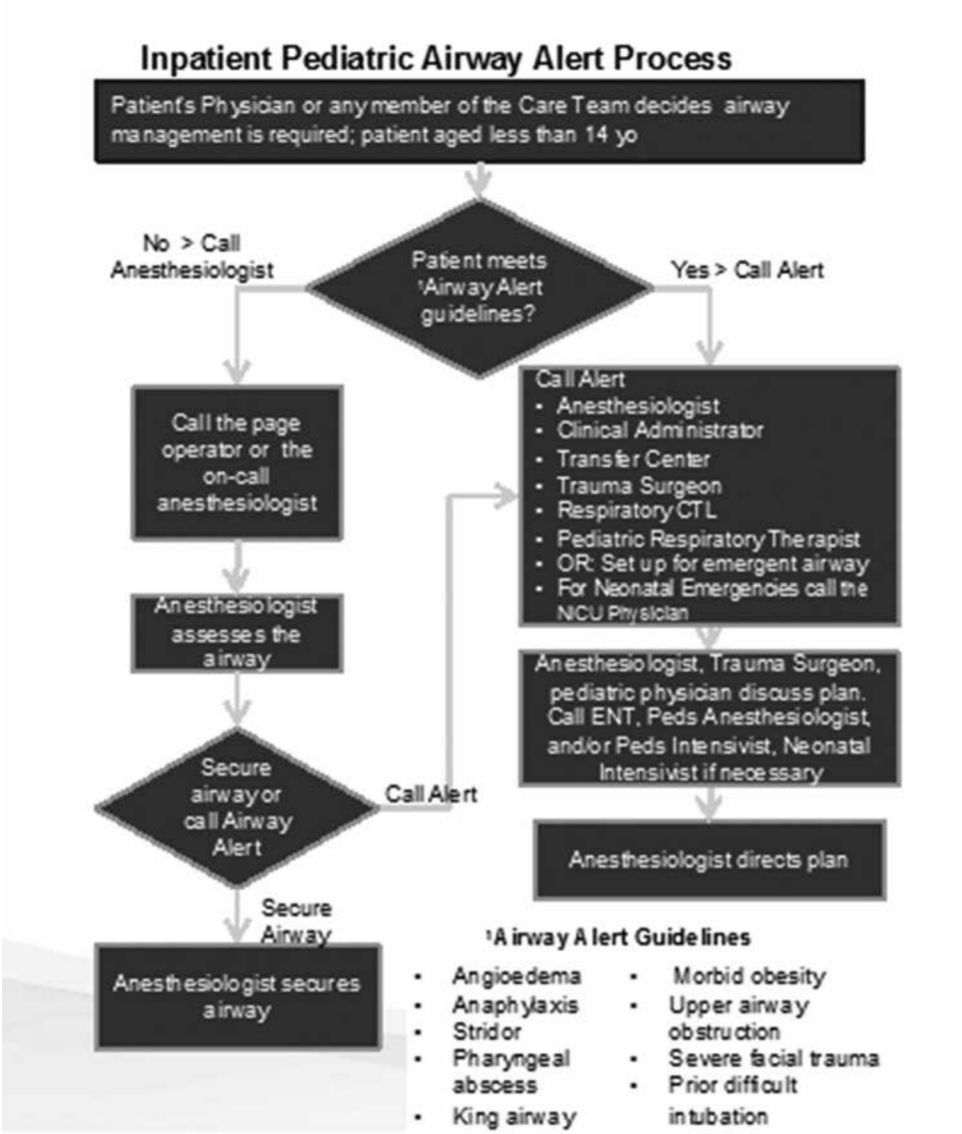
Pediatric intensivists were consulted in mapping out a process for pediatric patients. Our Performance Improvement Engineer mapped out multiple pathways for patient management before we decided on the pathways shown in the flowchart. It was also important to standardize airway equipment and to ensure there was enough equipment to stock carts that would be brought to the patient's bedside during an alert.

Another important aspect of the committee's work was education; ensuring that physicians, nurses, and respiratory therapists throughout the hospital became aware of the alert, and when to call an alert, instead of calling only the anesthesiologist as they would for a routine intubation.

When an Airway Alert is called, those paged to the patient's location are the anesthesiologist, trauma surgeon, nursing clinical administrator, respiratory clinical team leader, respiratory therapist, and the OR is notified in the event a room needs to be quickly set up for a surgical airway.

Everyone called converges at the patient's bedside to assess the patient's condition. The fundamental question for the physicians present is whether the patient's airway can be safely managed at the bedside or better managed in the OR. If a surgical airway seems likely, will the trauma surgeon be in attendance or will the ENT surgeon be called in? ENT surgeons do not take in-house call and have a 30-minute response time. For pediatric patients, the pediatric anesthesiologist also takes call from home with a similar response time.

These difficult airway emergencies are low volume, yet very high risk, and thus require near perfect management to achieve the most optimal outcomes. The Airway Alert Process provides for a multi-provider rapid-response team for skilled airway management, which results in improved patient safety through collaboration.



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