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Increasing Effectiveness of the Surgical Airway Response System: Introduction of the Otolaryngology Airway Pager, Quality Improvement Project of the PGY-2 Class

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INTRODUCTION

The need for an Otolaryngology airway pager is based on several external and internal factors. The current communication pathway for emergent airways at our institution is well established but often misinterpreted. The protocol is outlined in Figure 1. The priority to reach out to other departments is based on their availability of an attending in house overnight. Furthermore, there is often a delay in contacting the Otolaryngology department. Our service has multiple pagers to accommodate for each of our inpatient teams, which can be confusing for other services. One of the driving events for this project was an incident at JHN where a tracheostomy tube became dislodged. There were several attempts to contact our team through the wrong pager and by the time we were notified the patient had expired. In addition our personal cell phones are commonly used as the primary means of contact for urgent situations. On several occasions the wrong person has been called in the middle of the night or the on-call resident is contacted while they are in the operating room during the day, resulting in a slower response time. From the perspective of the Otolaryngology Department at times we receive multiple pages and answer in the order that the pages were received, not in order of acuity as this is unknown. A dedicated airway pager will help us prioritize our decisions most safely.

EMERGENT AIRWAY PROTOCOL [Figure 1]

Airway concern, need for intubation ----> Anesthesia ----> surgical airway concern, need for tracheostomy ----> Trauma ----> if either service requires assistance or patient is known to our department ----> Otolaryngology

Airway concern, patient with tracheostomy tube ----> Trauma or Otolaryngology (depending on who placed)

ANESTHESIA COLLABORATION

The Otolaryngology and Anesthesia departments commonly work together to manage complicated airways. A majority of our urgent calls are from the Anesthesia team and as such they represent a group that would benefit from a dedicated airway pager. We asked them to fill out a survey created to assess the current status of the Otolaryngology response to airway pages. There were 5 questions as shown in Figure 2.

Of the 12 responses, 7 (58%) reported their primary means of contact was through the on-call resident directly. If a page was sent, 58% (7/12) indicated that a response was obtained within 1-5 minutes. Only 25% (3/12) reported not getting an immediate response and needing to page multiple times. Finally, 75% (9/12) reported our team took 1-5 minutes to arrive at the scene.

As can be seen from the results above, the Otolaryngology department generally responds in a timely fashion. This is likely because we know any page could be a critical call. The most interesting result was that the majority of people contact our service by calling the resident's cell phone, which is what we are trying to steer away from.

IMPLEMENTATION

The Otolaryngology airway pager was introduced in March 2017. Since that time we have had 7 calls. Figure 3 displays a table documenting each call with specific information regarding the page.

ANESTHESIA SURVEY [Figure 2]

1. How do you currently reach out to ENT for airway emergencies?

- A) consult pager
- B) team pager
- C) emergency airway pager
- D) on call resident
- E) on call attending

2. Currently, how long does it take for ENT to respond to an airway emergency page?

- A) < 1 min
- B) 1 - 5 min
- C) 5 - 10 min
- D) > 10 min

3. Have you ever paged for ENT for an airway emergency and NOT gotten an immediate response?

Y or N

4. Have you had to page multiple times before a response?

Y or N

5. Currently, how long does it take for ENT to be on scene at an airway emergency?

- A) < 1 min
- B) 1 - 5 min
- C) 5 - 10 min
- D) > 10 min

BREAKDOWN OF AIRWAY CALLS [Figure 3]

DATE	TIME	TEAM CALLING	REASON	RRT or CODE?	EMERGENCY?	APPROPRIATE?	ANESTHESIA PRESENT?	FOI?	COMMENTS
3/28/17	0330	5 MICU	Requesting FOI because they felt patient too acidotic for normal intubation, no airway concern	No	No	No	Yes	No	Intubated by anesthesia
4/21/17	1030	5 MICU	Dysphagia consult	No	No	No	No	No	Incorrect pager
4/30/17	0600	Green 3	Patient we had been following for stridor, acutely decompensated	Yes	Yes	Yes	Yes	No	Called intern's cell phone first and ENT was already at the scene, then they paged
5/6/17	0645	SICU	H/o difficult airway requiring FOI in past, requesting FOI after acute change in mental status in patient with known IVC thrombosis	Yes	Yes	Yes	Yes	Yes	FOI performed by ENT
5/8/17	1800	3 MICU	Called for stridor. Pt had history of tonsil lymphoma s/p chemoXRT requiring trach 13 years ago	No	No	Yes	No	No	Anesthesia had intubated 1 day prior, wanted scope exam
5/10/17	0700	JHN Neurology	Patient desatting, unable to exchange uncuffed trach for cuffed	No	Yes	Yes	No	No	Able to place cuffed trach before ENT arrival
5/11/17	1730	MICU	Patient with tracheal stenosis, and respiratory distress	No	Yes	No	No	No	Intubated by anesthesia

ANALYSIS

As can be seen from Figure 3, 71% (5/7) of all calls occurred from an intensive care unit. 29% (2/7) occurred during an RRT or Code Blue, for which anesthesia was also present. 57% (4/7) calls were deemed an emergency and appropriate. Criteria to be labeled an emergency was a situation in which the patient required immediate intervention. An appropriate page is one in which our presence had a direct effect on patient care or decision making. Only 1/7 (14%) of the time was a fiberoptic intubation necessary.

CONCLUSIONS

Thus far, introduction of the Otolaryngology airway pager has been successful. More than 50% of the calls received were both appropriate and emergent enough to warrant an immediate evaluation. For our residents, the benefit of knowing a page requires a prompt reaction is extremely helpful. For our colleagues, we hope this enhances our response time and efficiency during urgent situations.

FUTURE CONSIDERATIONS

We are scheduled to give a lecture to the residents of the Medicine Department on May 31, 2017. The focus of the talk will be regarding how to handle common otolaryngology issues. For example, we will review basic tracheostomy care and the approach to epistaxis. During this time we will also discuss the purpose of the new Otolaryngology airway pager and how to use it properly. We are still in the process of planning an educational session for the surgical specialties. Furthermore, we will continue to document the types of airway calls received and routinely analyze the effectiveness of our new system.