Glidescope Enables Successful Emergency Intubation By Respiratory Therapists
Saint Agnes Hospital

Program/Project Description.
Emergency intubations outside the operating room carry a high rate of complications, often due to multiple failed attempts. Studies show that using the Glidescope (GS) videolaryngoscope (Verathon, Bothell WA) requires minimal training and may therefore result in a lower incidence of complications and failures. For emergency intubations, the only consistent members of the rapid response team are respiratory therapists (RT) who are trained to perform intubations but are not routinely credentialed to intubate. In order to broaden the base of providers able to perform emergency intubations we developed a GS training program for RTs and non-anesthesia resident physicians at our institution. The purpose of this prospective, descriptive study was to determine the success rates and complications encountered when the GS was used for emergency intubations by these providers and non-anesthesia attending physicians.

Process.
Glidescope was already being used extensively in our operating rooms. Prior to this study, respiratory therapists at Saint Agnes were not permitted to perform intubation. Members of the Department of Respiratory Therapy developed policy and procedure for RTs to intubate using the Glidescope, which was approved by the hospital. Additional Glidescopes were purchased for use in the intensive care unit, emergency department, and respiratory therapy.

Solution.
RT credentialing and training included didactics, simulator experience, written examination, 3 GS intubations and 1 LMA Supreme insertion under anesthesia supervision in the OR. Medical and surgical residents received didactics and simulator training only whereas attending physicians were given no formalized training other than an orientation to the GS device. Variables included number of attempts, time to intubation, patient demographics and intubating conditions. Conventional laryngoscopy and the LMA Supreme were available as rescue airway devices. Inferential and descriptive statistics were used to analyze data, a p-value of <0.05 was considered significant.

Measurable Outcomes.
After IRB approval, a total of 135 emergency intubations were evaluated. No differences in provider credentials (RT n=49; attendings n = 45; residents n = 41) or demographic variables were noted. Successful intubation on first attempt was 90% for RTs, 82% for attendings, and 56% for residents. Total time to intubate was 69 ± 89 seconds for RTs, 113 ± 145 seconds for attendings and 197 ± 218 seconds for residents, with significance noted between RTs and residents (p=0.001) and attendings and residents (p=0.039). Intubating conditions were similar between groups. Of note, were no esophageal intubations, dental or soft tissue injuries.

Sustainability.
This program is ongoing at Saint Agnes Hospital, and videolaryngoscopy is now routinely used hospital wide as the first-line approach for emergency airway management. Ascension Health, Saint Agnes Hospital's parent organization, is now planning a multicenter trial of whole-hospital implementation of videolaryngoscopy. This study demonstrated that following minimal training, RTs intubate with a similar success rate to ED and ICU attending physicians and should be considered by hospitals when considering emergency airway coverage. Furthermore, videolaryngoscopy should be considered as a first line approach by non-anesthesia members of rapid response teams.

Role of Collaboration and Leadership.
Key member of the Departments of Anesthesiology, Respiratory Therapy, Critical Care, Emergency Medicine, Internal Medicine and Surgery collaborated in the design and methods of this study. Hospital leadership was engaged for the implementation of new the policy and procedure for respiratory therapists. Part of Ascension Health mission is to provide "Healthcare That is Safe." Because of the potential for improvements in patient safety and outcomes, the substantial financial support required for this project was provided by executive leadership, despite being outside the traditional budget cycle.
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