Hospital-Wide Implementation of Videolaryngoscopy (Glidescope) For Emergency Intubation by Non-Anesthesiologists

Organization Name: St. Agnes Hospital
Contact Person: Kenneth P. Rothfield, M.D.
E-Mail: krothfiel@stagnes.org

**IDENTIFICATION:**

Emergency intubation outside the O.R. may be associated with a high rate of complications. Although the utility of videolaryngoscopy in anesthesiology has been demonstrated, its role in emergency airway management by non-anesthesiologists remains incompletely characterized. The purpose of this study was to evaluate the efficacy of the Glidescope Cobalt (Verathon, Bothell, WA) for emergency intubation throughout our institution, including the ICU, ER, and hospital floors.

**PROCESS:**

**Methods:** After IRB approval was obtained, a total of 92 subjects (70 Glidescope (GS); 22 Conventional Laryngoscopy (CL)) were enrolled in this prospective, descriptive study. Any adult patient requiring emergency intubation for cardiac arrest, respiratory insufficiency, or airway protection was included. Although respiratory therapists used GS exclusively, attending physicians could choose between GS and CL. A respiratory therapist was in attendance at each intubation and collected data using a standardized data collection tool. Prior to implementation of this study all personnel (physicians and RT) were trained in the use of the GS.

**SOLUTION:**

Policy and procedure for the training of Respiratory Therapists was developed. This included didactic teaching, simulator training, as well as intubations with the Glidescope in the operating room under the supervision of anesthesia providers. A Multidisciplinary Glidescope Quality Assurance meeting was developed using the captured videos from the device as well as the data forms. This meeting is held every other month to discuss interesting and problematic cases.

**OUTCOMES:**

**Results:** There were no significant differences between groups in relation to demographic variables, reasons for intubations, place of intubations or the time of day intubations were performed. Intubations were primarily performed by attending emergency room physicians and intensivists (44%), medical and surgical residents (31%), and respiratory therapists (RT) (25%).
Reasons for the use of Conventional Laryngoscopy over Glidescope included physician preference (n=18), failure to place ETT via Glidescope (n=2) and unavailability of Glidescope at time of intubation (n=2). There were significant differences in successfully placing the ETT on one attempt between the GS group (73%) and CL group (50%) (p= .009). When initial success rates for intubation using the GS by provider was analyzed, no significant differences among staff physicians (80%), resident physicians (76%) and RT personnel (91%). (p=.607) were noted. Time to place ETT was 202 ± 297 seconds in the GS group as compared to 560 ± 544 seconds in the CL group (p<.001). No significant differences noted between groups in relation to incidence of aspiration (n=5), esophageal intubation (n= 1) or dental injury (n=0). One patient was not successfully intubated and required an emergency cricoidthyrotomy.

Discussion: This study suggests that GS enables a wide range of providers to perform emergency intubation with a higher likelihood of initial success than is achievable with CL. Avoiding multiple intubation attempts promotes favorable patient outcomes\(^2\). GS may therefore be useful for emergency airway management in facilities lacking 24-hour anesthesia coverage.

References: