Postoperative Unplanned Intubation and Associated Patient Factors

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Background: Surgical patients undergoing anesthesia encounter physiologic changes that can lead to respiratory complications. Certain patient-related factors can increase this risk and potentially result in PUI, a serious complication in the perioperative period associated with increased patient morbidity, mortality, lengths of hospital stay, and healthcare costs.

Goals/Purpose: To examine healthcare-specific data for patient-related factors associated with postoperative unplanned intubation (PUI).

Objective/Aim: To identify patient-related factors most associated with PUI occurrence. Determining which patient-related factors increase risk for PUI can help providers better identify at-risk patients and optimize their anesthetic plan for surgery.

Methods: A retrospective secondary data analysis of the American College of Surgeons (ASC) National Surgical Quality Improvement Program (NSQIP) data was conducted at the Kaiser Permanente School of Anesthesia in Pasadena, California. Patients included were aged 18-90 years old who underwent surgery between 2017-2019. The primary outcome measure was the incidence of reintubation occurring within the first 30 days after surgery. Inferential and descriptive statistical analyses were conducted to identify correlations among various patient characteristics and the outcome measure PUI.

Results: Patient factors such as chronic obstructive pulmonary disease, congestive heart failure, insulin-dependent diabetes mellitus, American Society of Anesthesiology scores 3-4, dependent functional status, dyspnea, smoking histories, hypertension requiring pharmacotherapy, and inflammatory processes were all factors correlated to PUI.

Conclusions/Implications: Over 20 PUI risk factors were identified in this extensive secondary data analysis, the majority of which are consistent with previous research that examined patient-related factors and PUI risk. Thus, it is strongly recommended that a screening tool for PUI risk be developed based on these consistent findings, and used to inform peri-anesthesia nursing practices that might decrease the incidence of PUI.