

Project Submission:  
2009 Delaware Valley Patient Safety Award

**CROZER-CHESTER MEDICAL CENTER**

*“High Risk Airway Management Initiative”*

**Abstract**

In a unique demonstration of concern for patient safety, a system wide team was formed to address the identification, assessment, and care of the patient with a high risk artificial airway (HRA). These patients were defined as 1) having either an endotracheal or tracheotomy tube in place and 2) being at high risk for rapid cardio-respiratory compromise if the tube became dislodged. While the situation frequently occurs in the morbidity obese patient, it is not limited to this population. Other patients identified at high risk included patients with cervical-spine injuries, oro-pharyngeal tumors, facial and neck deformities, deviated tracheas, laryngeal edema, those with previous head and neck injuries and those requiring high levels of support from mechanical ventilation.

A multidisciplinary Steering Committee was formed that included surgeons, anesthesiologists, pulmonologists, emergency medicine physicians, respiratory therapists, nurse leaders, and quality directors. At the same time, each hospital within the health care network was responsible for reviewing their current practices and researching best practices. This included an evaluation of nursing policies, respiratory therapy policies, the utilization of sedation, emergency airway management, and available equipment. This information was reviewed and collated by the Steering Committee for development of system wide policies, procedures, and protocols. Upon completion, the initiative was disseminated to all members of the health care team utilizing an intranet educational tool developed by the Department of Nursing.

**Title:** High Risk Airway Management Initiative

**Goal:** The goals of implementing a High Risk Airway Management Program were as follows:

- To identify patients with high risk airways to ensure that measures are implemented to prevent the loss of airway control.
- To develop policies, procedures, and protocols utilizing best practice in the care of the high risk artificial airway patient.
- To implement an emergency management process should an endotracheal or tracheotomy tube becomes displaced.
- To ensure that appropriate equipment is available.
- To educate all healthcare providers in the care and treatment of patients with high risk airways.
- To ensure that these measures were implemented system wide.

**Baseline Data:** While baseline data was not available, the XXXX Health System, as with other hospitals, has seen increasing numbers of the morbidly obese patients who are at increased risk for this complication. More profoundly, we had experienced adverse events of this type throughout our system.

**Interventions:** A system- wide multidisciplinary team was formed that included surgeons, anesthesiologists, pulmonologists, respiratory therapists, nurse leaders, and quality directors. While the Steering Committee established the goals and objectives, subcommittees at each site were given the responsibility of reviewing their current practices and researching best practices. This information was brought back to the Steering Committee for evaluation and development of system policies, procedures, and protocols. Upon completion, these were disseminated to all members of the health care team utilizing an intranet educational tool developed by the Department of Nursing. The following interventions were put into place as a result of the initiative:

- **Defined High Risk Airway Patient Definition:** High risk patients were defined as having an endotracheal or tracheotomy tube in place and at high risk of severe cardio-respiratory compromise if dislodged. While this situation is not uncommon in the morbidity obese patient, it is not limited to this population. Other patients identified at high risk included patients with cervical-spine injuries, oral-pharyngeal tumors, facial and neck deformities, deviated tracheas, laryngeal edema, those with previous head and neck injuries and those with high levels of mechanical ventilator support.
- **Developed clinical policies and procedures related to the care of the high risk airway patient:** A clinical policy was developed to ensure that preventative measures are implemented to overcome the loss of airway control. These preventative measures are implemented when transporting

or positioning the high risk patient. Additionally, the policy addresses sedation, managing emergencies, and necessary equipment.

- **Developed site specific process for managing emergencies:** Each site identified the appropriate personnel and notification process should the endotracheal or tracheotomy tube become dislodged. The response team is made aware that the patient is a high risk airway so that the necessary equipment is available for tube replacement.
- **Utilization of sedation protocol:** A preprinted sedation protocol is available to assist in maintaining the appropriate sedation level. Both the physician and the nurse are responsible to maintain the targeted sedation levels.
- **Standardized bedside equipment:** Emergency equipment placed at the bedside of high risk airway patients have been reviewed and standardized throughout the system. This equipment includes a sterile tracheotomy tray, a sterile cricothyrotomy tray, an ambu bag, and suction, along with the obturator from the patient's current tracheotomy tube. Additionally, the same size and a smaller size tracheotomy tube are available at the bedside for re-insertion. The tubes accompany the patient when they are transported out of the unit at any time.
- **Developed intranet education and communication implementation plan:** An intranet video was developed by the Nursing Education Department to assist in the implementation of the roll-out. Additionally, this information was discussed at physician meetings along with nursing, and respiratory practice councils.

**Results:** A preliminary evaluation of the program indicates that there has been an increased awareness and identification of the high risk airways patients since the implementation of the program. This is evidenced by the increased usage of the high risk airway signs that are placed at the patients' bed. Additionally, an increased comfort level in working with these patients has been identified by the Nursing Education Department.

**How this initiative may be replicated throughout the region:** The policies, procedures can be adaptable for use in acute care settings. This program can be implemented in its entirety or broken down into specific interventions. The key factor in the program success is a collaborative effort among departments to promote patient safety within the organization.