**CLINICAL SUMMARY**

**Improved Outcomes with Routine Respiratory Therapist Evaluation of Non-Intensive-Care-Unit Surgery Patients**

Study conducted by University of Pittsburgh Medical Center Department of Respiratory Care

Brian G Harbrecht MD, Edgar Delgado RRT, Raymond P Tuttle RRT, Mark H Cohen-Molamed RRT, Melissa I Saul MSc, and Cynthia A Valenta RN MSN CNRN.

Respir Care 2009; 54(7):861-867

This paper examined how a respiratory therapist (RT) driven 'evaluate-and-treat' protocol for non-ICU surgery patients can reduce respiratory complications and improve patient outcomes.

- A total of 2,230 patients were in the control group, which was directed by physician orders and based on the physician’s assessment of the patient’s risk of pulmonary complications.
- A total of 2,805 patients were in the test group which was directed by the RT. The RT used a standardized patient-assessment tool to quantify the severity of pulmonary risk factors and guide the frequency of interventions. Based on the RT assessment a patient-specific care plan was developed which may have included positive expiratory pressure (PEP), oscillatory PEP, incentive spirometry, chest percussion, bi-level positive airway pressure, airway suctioning, intermittent positive-pressure breathing, and bronchodilator.
- A comparison of patients at high risk for pulmonary complications, a subset of both the test and control group, who were admitted to the ICU, showed that patients administered respiratory therapy had a shorter total hospital stay and had lower total hospital costs. Additionally, the group who received respiratory therapy had lower ICU admissions and a lower overall mortality.

**Conclusion:**

This study indicates that a RT driven protocol and plan of care can lead to decreased ICU stays and subsequently decreased hospital costs in patients at high risk for pulmonary complications. The RT driven protocol used a variety products, including PEP and oscillatory PEP therapy devices. No single device may fill all the needs of a patient and patient needs change with an evolving disease state. The protocol highlights that not all patients will have similar needs and that an organized decision tree may be beneficial to provide the optimal therapy to each patient.

UMPC protocols for secretion management and hyperinflation are included in this document.

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**Definitions:**

PEP – positive expiratory pressure  
IS – Incentive Spirometry  
EzPAP – positive airway pressure  
BD – bronchodilator

**Contraindications:**

Surgery/underlying condition that requires avoidance of increased CSF/ICP/Intrathoracic pressure from cough/valsalva maneuver (i.e., EEA surgery)

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**Conclusion:**

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UMPC protocols for secretion management and hyperinflation are included in this document.
Definitions:
PEP – positive expiratory pressure
IS – Incentive Spirometry
EzPAP – positive airway pressure
BH - Bronchial Hygiene
Effective cough: IS vol ≥ 10 cc/kg or ≥ 1000 ml and ability to clear secretions

**Therapist may escalate faster in pathway if deemed appropriate**