

## **Evidence-Based Practice Project: Use of Cool Mist for Post-Extubation Croup in Children**

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### **PROBLEM: What practice problem did you address and why is change needed?**

Symptoms of post-extubation “croup” were frequently reported in the Post Anesthesia Care Unit (PACU) of a major pediatric medical center. A “barky” cough, inspiratory stridor, hoarseness and chest retractions are serious airway complications in pediatric patients, whose narrow tracheal lumen can be severely compromised by post-extubation edema. Traditionally these symptoms have been treated with cool mist (cool humidified air). Questions about the benefits of cool mist in the post-extubated patient and noted inconsistencies in practice led to an examination of the evidence.

### **EVIDENCE: What evidence did you use to address the problem and how was it gathered and appraised?**

Anecdotal evidence was gathered and a unit work group formed to investigate the clinical problem. The Model for Change to Evidence-Based Practice (Rosswurm & Larrabee, 1999) was adopted to guide the investigation and implement the findings. The PICO question included: Among children with post-extubation croup, does use of cool mist versus no cool mist, reduce symptoms of post-extubation croup? An internal search for institutional policies was conducted without relevant findings, and the problem was further validated by internal and external clinical experts.

### **STRATEGY: What strategy was used to address the problem and how was it gathered and appraised?**

A literature search was conducted using the databases of Pub Med, Medline, CINAHL, Guidelines.gov, and ClinicalTrials.gov. Two randomized-controlled trials (Scolnik, 2006 & Neto, 2002: Level II Evidence) and one systematic review (Moore & Little, 2006: Level I Evidence) on humidified air were appraised, leveled and graded. All demonstrated similar results indicating no benefit to the use of humidified air for relief of viral croup in children, however the effects of temperature were not studied consistently. Two articles from the post-anesthesia literature reported the benefits of cool mist in the treatment of post-extubation croup (Strength of the Body of Evidence: Grade C).

### **PRACTICE CHANGE: What specific practice change was made) for quality improvement studies) or procedure evaluated (for research studies)?**

Preliminary findings suggest conflicting evidence for the best treatment for post-extubation croup. Further review of additional evidence is pending. These findings will aid in the decision to conduct a research study or recommend a practice change based on evidence.

**EVALUATION: What outcomes were measured and how?**

Pending.

**RESULTS: What did you find?**

Pending.

**RECOMMENDATIONS: What recommendations do you have for practice? What lessons did you learn?**

Pending.

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