

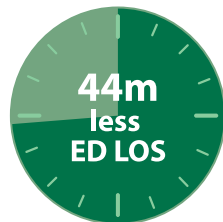
# NEBUTECH® HIGH-PERFORMANCE NEBULIZER

## Case Review #1

**Performance:** NebuTech® vs 1-hour continuous nebulizer treatment (standard of care) in children with moderate to severe asthma exacerbations.

**Study Location:** Dell Children's Medical Center—Austin, Texas (as presented at the Pediatric Academic Societies (PAS) 2016 annual meeting by Matthew Wilkinson, MD)

**Results:** Emergency Department (ED) length of stay (LOS)\* was reduced by over 44 minutes ( $p < 0.001$ ).



Breath-enhanced NebuTech provides a large bolus of medication early in the inspiratory phase,<sup>1</sup> so anxious asthmatic patients and their parents can spend less time in the ED. Overall, 5-minute back-to-back treatments with NebuTech nebulizers allowed for<sup>2</sup>:

- Shorter time between assessments
- Quick action upon symptom resolution
- Similar safety profile
- Statistically significant reduction in ED LOS of over 44 minutes (118 mins vs 163 mins)

Additionally, there were zero readmissions for patients treated with NebuTech, even though they presented with a PAS score of 3 or higher.

**Now think what NebuTech could mean for improved ED workflow and reduced medical costs in your institution.**

## Case Review #2

**Clinical and Cost Benefits:** NebuTech® vs AeroEclipse® II BAN in patients admitted to the ED for acute exacerbations of COPD.

**Study Location:** North Mississippi Medical Center—Tupelo, MS (as presented in Respiratory Therapy by Kathy Ehlers, BA, RRT-Director of Respiratory Care)

**Results:** Patients treated with breath-enhanced NebuTech nebulizer compared to AeroEclipse BAN experienced:

**50%** reduction in treatment times (4.0 vs 8.0 min,  $p < 0.0001$ )

**14.3%** reduction in median number of treatments (3.0 vs 3.5,  $p < 0.0006$ )

**36 minutes** shorter ED stay (2.5 vs 3.1 hrs,  $p < 0.0001$ )

**Medication savings:** To speed up treatment time with the AeroEclipse, concentrated medication was used. Less expensive generic medication was used with NebuTech, which enabled average medication savings of:

- **\$6.39 for first nebulizer treatment in the ED**
- **\$2.94 for subsequent treatments**

**Labor efficiency:** Shorter treatment times and reduced number of treatments with NebuTech translates to 9,000 hours of labor for RT nebulizer treatments saved annually.

**Based on 136,000 annual nebulizer treatments/year, an annual savings of \$168,875 could be realized on medication costs with NebuTech, plus an additional \$20,000/year in nebulizer disposables.**

\*LOS = start of therapy to discharge decision

**References:** 1. Misra C. Improved aerosol delivery characteristics of a breath enhanced nebulizer over a breath actuated nebulizer. *American Association for Respiratory Care*; December 2009. 2. Wilkinson M, et al. Comparison of nebulizers in ED in pediatric asthma patients. Abstract 4139.301. Presented at Pediatric Academic Societies (PAS) 2016 annual meeting, May 2016; Baltimore, MD.

# Thirty-six patients were treated (18 in each arm) using the same mouthpiece and flow rate.

**Source:** Ehlers, K. Case study: respiratory collaborative group savings initiative. *Respir Ther.* 2013;8(5):51-52.

# NEBUTECH® HIGH-PERFORMANCE NEBULIZER

## Case Review #3

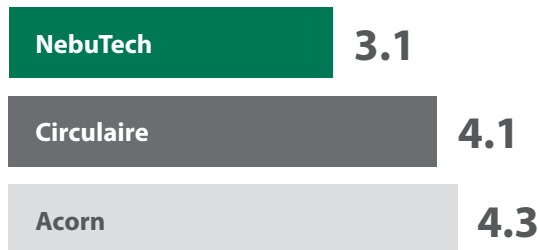
**Technology and Efficacy:** NebuTech® vs standard T-piece nebulizers (Acorn SVN or Circulaire) in pediatric asthma patients

**Study Location:** University Hospitals of Cleveland and Rainbow Babies & Children's Hospital—Cleveland, OH (as presented in Respiratory Care by Timothy R. Myers, RRT, et al.)

**Results:** When treated in the ED, 259 status asthmaticus patients (ages 1 to 7) were treated with either NebuTech or a standard T-piece nebulizer, with NebuTech providing:

up to 16% reduction in ED LOS
18% reduction in treatment time
over ¼ fewer aerosol treatments
36% and 50% reduction in hospital admissions vs Circulaire® and Acorn®, respectively (p=0.02)

**Fewer treatments needed:**



**Breath-enhanced NebuTech demonstrated significant clinical outcome improvements, which translate to financial benefits.**

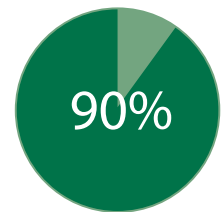
## Case Review #4

**Large-Scale Implementations:** HCA and IDN-wide standardizations to NebuTech®

**Study Location:** More than 150 member facilities

**Results:** Standardization to high-performance NebuTech nebulizers in a large healthcare system produced the following:

- \$500,000 in annual savings to the system
- 90% of units converted to NebuTech within 6 months of commitment
- High satisfaction—not one facility has converted back to their previous nebulizer



To support a quick, seamless implementation, SunMed uses a high-touch approach that engages key clinicians, in-services all facilities, and works closely with distribution channels.

**Based on 136,000 annual nebulizer treatments/year, an annual savings of \$168,875 could be realized on medication costs with NebuTech, plus an additional \$20,000/year in nebulizer disposables.**

Source: Myers TR, Chatburn R, Rogers M, Camasso-Richardson K, Kerscmar C. Does nebulizer brand make a clinical difference in the emergency room management of pediatric asthma? *Respir Care*. 1999;44(10):1278.