

## Care Plan including D R Burton iPEP® for improved respiratory outcomes

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### Introduction

We report the use of the iPEP® (D R Burton Healthcare LLC, Farmville, North Carolina) as a component of a respiratory therapy regimen for a patient at high risk for invasive pneumonia procedures and rehospitalization.

### Case Overview

Patient is a medically complex 30 year old male presenting with sepsis and pneumonia. The patient was admitted to hospital ICU with abnormal Arterial Blood Gases demonstrating severe hypoxia with a Room Air PaO<sub>2</sub> of less than 60 mmHg. The patient was initiated on a high flow nasal cannula with settings of 25 liters of oxygen at 75% FiO<sub>2</sub> on a VapoTherm. He was also initiated on an incentive spirometer but he could only achieve 750 ml before excessive coughing. Patient was then transitioned to the iPEP, which is a new combination incentive spirometer and oscillating positive expiratory pressure (OPEP) device, and he immediately increased his inspiratory capacity.

### Results

By increasing patient fluid intake and also through periodic use of the iPEP ordered Q 4 H with patient's medicated aerosol therapy, patient began mobilizing secretions. Within 48 hours, he improved dramatically with the discontinuance of the high flow nasal cannula, and was transitioned to 2 LPM LF nasal cannula demonstrating 95% oxygen saturation. By day four, patient was at 97% oxygenation on Room Air (21%). He was then discharged home and instructed to continue using the iPEP's removable PocketPEP for OPEP use at home. He did not return to the hospital.

### Discussion

Like many hospitals in the winter time, treating pneumonia and preventing respiratory-related readmissions is a one of the biggest challenges. Until the iPEP, Stephens County had started pneumonia patients on incentive spirometers. However, after successful cases such as this 30 year old male, Stephens County is changing their protocol to initiating the iPEP for patients presenting with pneumonia, bronchitis or visible chest x-ray showing pneumonia.

Jim Halsey says, "If the iPEP decreases patient rehospitalizations or decreases ICU length of stay by even one day, it's a huge win." The iPEP is a volume- based OPEP device that enables clinicians to see how much air patients are taking in. Halsey explains, "With the iPEP, you know if patients are getting enough air to make therapy functional. The iPEP really does the job for us and is a viable answer to the challenges of respiratory-related rehospitalizations and length of stay."

### Conclusion

In this pneumonia patient, the addition of the iPEP to the care plan resulted in rapid respiratory improvement and supported home discharge within four days.