Introduction:
According to the 2003 Agency for Healthcare Research and Quality (AHRQ) data, cost and length of stay associated with the care of the tracheostomized patient ranks 2nd in the nation, making this diagnosis one of the most expensive medical conditions to treat (1). There is a well known correlation between prolonged mechanical ventilation and increased length of stay, increased cost of care, and increased morbidity. It is well documented in the most recent literature that earlier ambulation in the critical care areas has decreased the length of stay in the ICU by as much as 30% (2, 3). It is also well documented that earlier intervention by a multidisciplinary team working towards common goals would improve weaning rates.

Objective:
In 2010, the Respiratory Therapy and Rehabilitation Departments at Kindred Hospital - Wyoming Valley began early, collaborative assessment of all tracheostomized patients with the goal of early ambulation in the LTAC environment would improve weaning rates.

Methods:
We decided to incorporate ambulation trials using the Passy-Muir® Valve (PMV) on all patients who could tolerate the valve as early as possible – even those patients who required mechanical ventilation. This is an important aspect of our protocol, as the literature supports using a PMV to restore positive intra-thoracic pressure, which improves postural control, upper extremity force, bowel and bladder emptying, swallowing and voicing (4). Inclusion criteria for a PMV are based on vital signs, medical stability, and swallowing function. We evaluate patients with large amounts of secretions, when other places use that as exclusion criteria. Even traumatic brain injury patients are evaluated. Tracheostomy tubes are downsized as needed to allow ample expiratory airflow once the valve is placed. When patients are not immediately included in valve trials due to intolerance, they are re-assessed throughout their stay for changes in their condition and criteria. Due to their conditions, not all patients were candidates to ambulate at first. Some patients could only tolerate a few steps inside their rooms initially, but then progressed to hallway ambulation. As the patients’ exercise tolerance progressed, advanced gait training and pulmonary rehabilitation continued.

Results:
Early intervention by a multidisciplinary team to incorporate ambulation therapy, in conjunction with utilizing a PMV as soon as possible after admission, has improved our facility’s ventilator weaning rates by 13% over 1.5 years.

Clinical Implications:
This prospective data has shown early collaboration and intervention with the Respiratory Care Practitioners and the Rehabilitation Staff improves weaning outcomes. Further research needs to be done to determine the most significant factor responsible for improved ventilator weaning: early use of the Passy-Muir Valve, early ambulation of the tracheostomized patient, or the combination of the two.

References: