Medical Policy



Non-Invasive Negative Pressure Ventilation

Description

Noninvasive ventilation refers to the delivery of ventilatory support without endotracheal intubation or tracheostomy. Traditionally, noninvasive ventilation has been given with the use of devices that apply intermittent negative extrathoracic pressure (noninvasive negative pressure ventilation) and are used for individuals with stable or slowly progressive respiratory failure due to neuromuscular diseases, chest wall deformity, or central hypoventilation syndromes.

Policy

Non-invasive negative pressure ventilation is considered **reasonable and necessary** for Members that meet coverage criteria outlined below.

Policy Guidelines

Coverage Criteria:

- 1. Must be ordered by the Member's treating physician.
- 2. Negative pressure ventilation will be covered for Member's whose medical record shows documentation of one the following:
 - A. A confirmed diagnosis of one of the following conditions:
 - i. Slowly progressive neuromuscular diseases (e.g., muscular dystrophies, poliomyelitis, multiple sclerosis, spinal cord diseases, diaphragmatic paralysis, etc.), or
 - ii. Chest wall deformity (e.g., post-thoracoplasty for TB, etc.), or
 - iii. Central hypoventilation (i.e., apnea not due to airway obstruction);
 - B. Chronic stable or slowly progressive respiratory failure that meets at least one of the following:
 - Significant CO2 retention (PaCO2 greater than 50 mm Hg); or

- ii. Mild CO2 retention (PaCO2 greater than 45 mm Hg) with any of the following symptoms:
 - 1. Morning headache, or
 - 2. Daytime hypersomnolence, or
 - 3. Cognitive dysfunction, or
 - 4. Documented nocturnal hypoventilation or oxygen desaturation (with oxyhemoglobin saturation less than 88% for at least 5 minutes).

A second invasive or non-invasive ventilator may be considered reasonable and necessary if it is required to serve a different purpose as determined by the member's medical needs. Examples (not all-inclusive) of situations in which multiple ventilators may be considered reasonable and necessary are:

- 1. An individual requires one type of ventilator (e.g., a negative pressure ventilator with a chest shell) for part of the day and needs a different type of ventilator (e.g., positive pressure ventilator with a nasal mask) during the rest of the day.
- 2. An individual who is confined to a wheelchair requires a ventilator mounted on the wheelchair for use during the day and needs another ventilator of the same type for use while in bed. Without both pieces of equipment, the individual may be prone to certain medical complications, may not be able to achieve certain appropriate medical outcomes, or may not be able to use the medical equipment effectively.

Limitations:

- 1. Repair of a device is limited to restoration of a serviceable condition which is not the result from misuse, non-intentional or intentional.
- 2. The replacement of a device is covered if any of the following criteria is met:
 - A. When necessitated by irreparable damage not due to misuse, intentional or non-intentional.
 - B. An irreparable change in the condition of, or in a part, of the device.
 - C. The cost of repairs to the device would exceed the purchase price.

THCPCS Level II Codes and Description

E0457	Chest shell (Cuirass)
E0459	Chest wrap
E0460	Negative pressure ventilator; portable or stationary

COVERED ICD-10 CODES IF SELECTION CRITERIA ARE MET:

J96.10 – J96.12 Chronic respiratory failure

•NONCOVERED ICD-10 CODES IF SELECTION CRITERIA ARE MET:

J96.00 – J96.02 Acute respiratory failure (acute hypoxemic respiratory failure)

Important Note:

Northwood's Medical Policies are developed to assist Northwood in administering plan benefits and determining whether a particular DMEPOS product or service is reasonable and necessary. Equipment that is used primarily and customarily for a non-medical purpose is not considered durable medical equipment.

Coverage determinations are made on a case-by-case basis and are subject to all of the terms, conditions, limitations, and exclusions of the member's contract including medical necessity requirements.

The conclusion that a DMEPOS product or service is reasonable and necessary does not constitute coverage. The member's contract defines which DMEPOS product or service is covered, excluded or limited. The policies provide for clearly written, reasonable and current criteria that have been approved by Northwood's Medical Director.

The clinical criteria and medical policies provide guidelines for determining the medical necessity for specific DMEPOS products or services. In all cases, final benefit determinations are based on the applicable contract language. To the extent there are any conflicts between medical policy guidelines and applicable contract language, the contract language prevails. Medical policy is not intended to override the policy that defines the member's benefits, nor is it intended to dictate to providers how to direct care. Northwood Medical policies shall not be interpreted to limit the benefits afforded to Medicare or Medicaid members by law and regulation and Northwood will use the applicable state requirements to determine required quantity limit guidelines.

Northwood's policies do not constitute medical advice. Northwood does not provide or recommend treatment to members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

References

- 1. Aetna: Non-invasive Negative Pressure Ventilation: Body Ventilators and Poncho Wrap http://www.aetna.com/cpb/medical/data/200_299/0298.html
- 2. Hillberg RE, Johnson DC. Current concepts: Noninvasive ventilation. N Engl J Med. 1997;337(24):1746-1752.
- 3. Hill NS. Use of negative pressure ventilation, rocking beds, and pneumobelts. Respir Care. 1994;39(5):532-549.
- 4. Gilmartin ME. Body ventilators. Equipment and techniques. Respir Care Clin N Am. 1996;2(2):195-222.
- 5. Bonekat HW. Noninvasive ventilation in neuromuscular disease. Crit Care Clin. 1998;14(4):775-797.
- Hill NS. Noninvasive mechanical ventilation. In: Pulmonary and Critical Care Medicine. 1998 ed. RC Bone, DR Dantzker, RB George, et al., eds. St. Louis, MO: Mosby-Year Book, Inc.; 1998: R41-1 - R41-22.
- 7. Curran FJ. Night ventilation by body respirators for patients in chronic respiratory failure due to late stage Duchenne muscular dystrophy. Arch Phys Med Rehab. 1981;62:270-274.
- Garay SM, Turino GM, Goldring RM. Sustained reversal of chronic hypercapnia in patients with alveolar hypoventilation syndromes: Longterm maintenance with noninvasive nocturnal mechanical ventilation. Am J Med. 1981;70:269-274.
- Shapiro SH, Ernst P, Gray-Donald K, et al. Effect of negative pressure ventilation in severe chronic obstructive pulmonary disease. Lancet. 1992;340:1425-1429.
- 10. Ferguson G. Noninvasive ventilation. National Jewish Medical and Research Center Medical/Scientific Update. 1993;11(3):1-3.
- Owens MW, Wissing DR, Milligan SA, et al. Respiratory care modalities. In: Pulmonary and Critical Care Medicine. 1998 Ed. RC Bone, DR Dantzker, RB George, et al., eds. St. Louis, MO: Mosby-Yearbook, Inc.; 1998: D5-1 - D5-20.

- Robert D, Willig TN, Paulus J, et al. Long-term nasal ventilation in neuromuscular disorders: Report of a consensus conference. Eur Respir J. 1993;6:599-606.
- National Association for Medical Direction of Respiratory Care (NAMDRC). Clinical indications for noninvasive positive pressure ventilation in chronic respiratory failure due to restrictive lung disease, COPD, and nocturnal hypoventilation -- A consensus conference report. Chest. 1999;116(2):521-534.
- 14. Corrado A, Gorini M. Negative-pressure ventilation: Is there still a role? Eur Respir J. 2002;20(1):187-197.
- 15. Shneerson JM, Simonds AK. Noninvasive ventilation for chest wall and neuromuscular disorders. Eur Respir J. 2002;20(2):480-487.
- 16. Corrado A, Gorini M. Long-term negative pressure ventilation. Respir Care Clin N Am. 2002;8(4):545-557, v-vi.
- Shah PS, Ohlsson A, Shah JP. Continuous negative extrathoracic pressure or continuous positive airway pressure for acute hypoxemic respiratory failure in children. Cochrane Database Syst Rev. 2008;(1):CD003699.
- 18. Chen ML, Keens TG. Congenital central hypoventilation syndrome: Not just another rare disorder. Paediatr Respir Rev. 2004;5(3):182-189.
- 19. Palmetto Government Benefits Administrators (GBA), Durable Medical Equipment Regional Carrier. Backup equipment. DMERC Medicare Advisory. Issue 42. Columbia, SC: Palmetto GBA; Autumn 2002:84-85.
- 20. Ottonello G, Ferrari I, Pirroddi IM, et al. Home mechanical ventilation in children: Retrospective survey of a pediatric population. Pediatr Int. 2007;49(6):801-805.
- 21. Annane D, Orlikowski D, Chevret S, et al. Nocturnal mechanical ventilation for chronic hypoventilation in patients with neuromuscular and chest wall disorders. Cochrane Database Syst Rev. 2007;(4):CD001941.
- Shah PS, Ohlsson A, Shah JP. Continuous negative extrathoracic pressure or continuous positive airway pressure for acute hypoxemic respiratory failure in children. Cochrane Database Syst Rev. 2008;(1):CD003699.

Applicable URAC Standard

Core 8	Staff operational tools and support
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Revision Number	Date	Description of Change	Prepared/Reviewed by	Approved by	Review Date:
А	Nov.2006	Initial Release	Rosanne Brugnoni	Ken Fasse	n/a
01		Annual Review / no changes	Susan Glomb	Ken Fasse	Dec.2008
02	12-22-09	Annual Review/ no changes	Susan Glomb	Ken Fasse	Dec. 2009
03	12-03-10	Annual Review – No changes	Susan Glomb	Ken Fasse	Dec.2010
04	02-18-11	Policy updated to reflect current practice.	Susan Glomb	Ken Fasse	
05	07-20-11	Added Important Note to all Medical Policies	Susan Glomb	Dr. B. Almasri	
06	12-07-11	Annual Review. Added References to Policy	Susan Glomb	Dr. B. Almasri	Dec. 2011
07	04-04-12	Added reference to NH Medicaid	Susan Glomb	Dr. B. Almasri	
08	11-30-12	Annual review – no changes.	Susan Glomb	Dr. B. Almasri	Nov. 2012
09	12-30-13	Annual review. No changes	Susan Glomb	Dr. B. Almasri	
10	11-24-14	Annual Review. No changes	Susan Glomb	Dr. B. Almasri	
11	12-04-15	Annual Review. Updated to ICD- 10 codes.	Lisa Wojno	Dr. B. Almasri	December 2015

Change/Authorization History