# MedStar Health, Inc. POLICY AND PROCEDURE MANUAL

Policy Number: PA.066.MH Last Review Date: 02/08/2018 Effective Date: 04/01/2018

# PA.066.MH – High Frequency Chest Wall Oscillation Devices

This policy applies to the following lines of business:

- ✓ MedStar Employee (Select)
- ✓ MedStar CareFirst PPO

MedStar Health considers a **High Frequency Chest Wall Oscillation Device (HFCWO)** medically necessary when all of the following indications are met:

- The member has failed trials of alternative methods of expectoration (i.e. mucolytic agents, handheld flutter device, self-controlled breathing techniques, conventional chest physical therapy consisting of postural drainage and percussion)
   AND
- 2. The member has an adequate physiological cough reflex. AND
- 3. The member has one of the following conditions:
  - There is a diagnosis of cystic fibrosis
  - There is a diagnosis of Bronchiectasis which has been confirmed by a high resolution, spiral, or standard computed tomography (CT) scan and which is characterized by daily productive cough for at least six continuous months; or frequent (i.e. more than two/year) exacerbations requiring antibiotic therapy
  - Ciliary dyskinesia syndrome
  - Cavitating lung disease
  - Other chronic conditions including but not limited to:
    - Post-polio
    - Acid maltase deficiency
    - Anterior horn cell diseases
    - Multiple sclerosis
    - Quadriplegia
    - Hereditary muscular dystrophy
    - Myotonic disorders
    - Other myopathies
    - Paralysis of the diaphragm

#### **CONTINUATION OF HCFWO:**

Successful rental trials for three months need to be documented prior to extensions.

## Replacement supplies



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Replacement supplies are covered when the criteria for the base device are met.

**Exclusions – HFCWO devices are considered** not medically necessary and therefore not covered for the following:

- Chronic bronchitis and chronic obstructive pulmonary disease (COPD) in the absence of a confirmed diagnosis of bronchiectasis
- The use of a HFCWO (E0483) and a mechanical insufflation device (E0482) at the same time.
- Use of devices that are not approved by the Food and Drug Administration (FDA) or have been recalled by the FDA

#### See Also:

PA.010.MH Durable Medical Equipment and Corrective Appliances

### Background

High-frequency chest wall compression (HFCWC) or High-frequency chest wall oscillation devices (HFCWO) devices assist members who have the inability to cough due to respiratory muscle weakness or pulmonary conditions secondary to chronic conditions listed in the indications section above. These members are especially prone to secretion-related complications during upper respiratory tract infections or general anesthesia. These devices work by vibrating the chest wall at a higher frequency than the individual's normal respiratory rate.

HFCWO systems consist of two main components: a vest worn by the patient and a pneumatic air-pulse generator that rapidly inflates and deflates the vest. The vest is made of non-stretch material and covers the thorax like a life jacket; two large-bore air hoses connect the vest to the generator. A hand/foot control can be used to start or stop the compression.

#### Codes:

#### **HCPCS Modifiers:**

RR Rental (used for DME Rental)

NU New Equipment

HCPCS/CPT Codes	
Code	Description
E0483	High frequency chest wall oscillation air-pulse generator system, (includes hose and vest), each



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A7025	High frequency chest wall oscillation system VEST, replacement for use with patient-owned equipment, each
A7026	High frequency chest wall oscillation system HOSE, replacement for use with patient-owned equipment, each

#### References

- Arens R, Gozal D, Omlin KJ et al: Comparison of high frequency chest compression and conventional chest physiotherapy in hospitalized patients with cystic fibrosis. Am J Respir Crit Care Med. 1994 Oct.; 150(4):1154-1157. <a href="http://www.atsjournals.org/doi/pdf/10.1164/ajrccm.150.4.7921452">http://www.atsjournals.org/doi/pdf/10.1164/ajrccm.150.4.7921452</a>
- 2. Bach J, Smith W H, Michaels J, et al. Airway secretion clearances by mechanical exsufflation for post-poliomyelitis ventilator-assisted individuals. Arch Phys Med Rehabil. 1993 Feb; 74 (2): 170-177. http://www.ncbi.nlm.nih.gov/pubmed/8431102
- 3. Bach J: Update and perspective on noninvasive respiratory muscle aids. Part 2: The expiratory aids. Chest. 1994 May; 105 (5): 1538-1544. <a href="http://journal.publications.chestnet.org/data/Journals/CHEST/21694/1538.pdf">http://journal.publications.chestnet.org/data/Journals/CHEST/21694/1538.pdf</a>
- 4. Braggion C, Cappelletti LM, Cornacchia M et al: Short-term effects of three chest physiotherapy regimens in patients hospitalized for pulmonary exacerbations of cystic fibrosis: a cross-over randomized study. Pediatr Pulmonol. 1995 Jan; 19(1):16-22. http://www.ncbi.nlm.nih.gov/pubmed/7675553

- 7. Dosman CR, Jones RL: High-frequency chest compression: a summary of the literature. Can Respir J. 2005 Jan-Feb; 12(1); 37-41. <a href="http://www.pulsus.com/journals/abstract.jsp?sCurrPg=journal&jnlKy=4&atlKy=3188&isuKy=353&isArt=t">http://www.pulsus.com/journals/abstract.jsp?sCurrPg=journal&jnlKy=4&atlKy=318&isuKy=353&isArt=t</a>
- 8. Hayes. High-Frequency Chest Wall Compression for Cystic Fibrosis. December 22, 2016.



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- 9. Hayes. High-Frequency Chest Wall Compression for Disease Other than Cystic Fibrosis. August 11, 2016.
- 10. Hess DR: The evidence for secretion clearance techniques. Respir Care. 2001 Nov; 46(11):1276-1293. <a href="http://www.ncbi.nlm.nih.gov/pubmed/11679147">http://www.ncbi.nlm.nih.gov/pubmed/11679147</a>
- 11. Irwin RS, Boulet LP, Cloutier MM, et al. Managing a cough as a defense mechanism and as a symptom. A Consensus Panel Report of the American College of Chest Physicians. Chest. 1998 Aug; 114(2-Suppl): 133S-181S. http://journal.publications.chestnet.org/data/Journals/CHEST/21826/133S.pdf
- 12. Koga T, Kawazu T, Iwashita K, et al: Pulmonary hyperinflation and respiratory distress following solvent aspiration in a patient with asthma: expectoration of bronchial casts and clinical improvement with high –frequency chest wall oscillation. Respir Care. 2004 Nov; 49(11): 1335-1338. <a href="http://rc.rcjournal.com/content/49/11/1335.full.pdf+html">http://rc.rcjournal.com/content/49/11/1335.full.pdf+html</a>
- 13. Kluft J Beker L, Castagnino M et al: A comparison of bronchial drainage treatments in cystic fibrosis. Pediatr Pulmonol. 1996 Oct; 22(4):271-274. http://www.ncbi.nlm.nih.gov/pubmed/8905888
- 14. Langenderfer B: Alternatives to percussion and postural drainage. A review of mucus cleance therapies: percussion and postural drainage, autogenic drainage, positive expiratory pressure, flutter valve, intrapulmonary percussive ventilation, and high-frequency chest compression with the ThAIRapy Vest. J Cardiopulm Rehabil. 1998 Jul-Aug; 18(4): 283-289 <a href="https://www.ncbi.nlm.nih.gov/pubmed/9702607">https://www.ncbi.nlm.nih.gov/pubmed/9702607</a>
- 15. Nicolini A, Cardini F, Landucci N, et al. Effectiveness of treatment with high-frequency chest wall oscillation in patients with bronchiectasis. BMC Pulm Med 2013 Apr; 13:21. <a href="http://www.biomedcentral.com/1471-2466/13/21">http://www.biomedcentral.com/1471-2466/13/21</a>
- Perry RJ, Man GCW, Jones RL. Effects of positive end-expiratory pressure on oscillated flow rate during high frequency chest compression. Chest. 1998 Apr; 113(4):1028-1033.
  - http://journal.publications.chestnet.org/data/Journals/CHEST/21763/1028.pdf
- 17. Scherer TA, Barandun J, Martinez E, et al: Effect of high-frequency oral airway and chest wall oscillation and conventional chest physical therapy on expectoration in patients with stable cystic fibrosis. Chest. 1998 Apr; 113(4): 1019-1027.
  - http://journal.publications.chestnet.org/data/Journals/CHEST/21763/1019.pdf
- 18. Varekojis SM, Douce FH, Flucke RL, et al: A comparison of the therapeutic effectiveness of and preference for postural drainage and percussion, intrapulmonary percussive ventilation, and high-frequency chest wall compression in hospitalized cystic fibrosis patients. Respir Care. 2003, 48(1): 24-28. <a href="http://rc.rcjournal.com/content/48/1/24.full.pdf+html">http://rc.rcjournal.com/content/48/1/24.full.pdf+html</a>



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