

High Frequency Chest Wall Oscillating Devices (HFCWO) (Airway Clearance Systems)

Date of Origin: 05/2015

Last Review Date: 03/22/2023

Effective Date: 04/01/2023

Dates Reviewed: 07/2016, 07/2017, 03/2019, 03/2020, 03/2021, 03/2022, 03/2023

Developed By: Medical Necessity Criteria Committee

I. Description

Chest wall oscillation is use of devices for clearing excess mucus from lung airways (bronchi and bronchioles). It is principally used in the treatment of cystic fibrosis but is gaining use in the treatment of other diseases, such as bronchiectasis, COPD, cerebral palsy and muscular dystrophy, in which excessive mucus can block airways due to excessive production or impaired clearance.

This “passive system” is not dependent on the effort of the patient. It uses a compressor to inflate and deflate the vest rhythmically at timed intervals and thus imposes high frequency chest wall oscillations (HFCWO) that are transferred to the lungs. These oscillations thin thixotropic airway mucus, facilitating its removal by coughing. Delivery of air to the vest can be controlled manually.

II. Criteria: CWQI HCS-0123

- A. **High frequency chest wall oscillating/compression devices (HFCWO)** are considered medically necessary when **all** of the following requirements are met;
- a. The treating physician (MD or DO), physician assistant (PA), nurse practitioner (NP) or clinical nurse specialist (CNS) must have face-to-face examination with the patient within the six (6) months prior to the date of the request
 - b. There is well-documented failure of standard treatments to adequately mobilize retained secretions
 - c. The request is **NOT** for both an HFCWO and mechanical in-exsufflation device (E0482)
 - d. And **1 or more** of the following indications are met;
 - i. A high resolution, spiral, or standard CT scan documentation of bronchiectasis that is characterized by **1 or more** of the following;
 1. History of daily productive cough for at least 6 continuous months
 2. History of frequent exacerbations requiring antibiotic therapy (i.e. more than 2 times/year)
 - ii. The patient does **NOT** have chronic bronchitis and chronic obstructive pulmonary disease in the absence of confirmed diagnosis of bronchiectasis

- iii. Cystic fibrosis or immotile cilia syndrome
 - iv. The patient has **one** of the following neuromuscular diseases:
 1. Acid maltase deficiency
 2. Anterior horn cell diseases, including amyotrophic lateral sclerosis
 3. Hereditary muscular dystrophy
 4. Multiple sclerosis
 5. Myotonic disorders
 6. Other myopathies
 7. Paralysis of the diaphragm
 8. Post-polio
 9. Quadriplegia regardless of etiology
 10. Lung transplant recipients with all the following indications;
 - a. Are unable to tolerate standard chest physiotherapy
 - b. Have submitted a request within the first 6 months post-operatively
- B. The following is a list of high frequency chest oscillation systems (Not an all-inclusive list)
- a. Frequencer
 - b. SmartVest
 - c. MedPulse Respiratory Vest System
 - d. The Vest Airway Clearance System
 - e. ABI Vest
 - f. Respin11 Bronchial Clearance system
 - g. InCourage Vest/System
- C. Airway clearance devices such as *airway oscillating devices, mechanical percussors, positive expiration pressure (PEP) mask* are considered medically necessary to assist in mobilizing respiratory tract secretions for **1 or more** of the following indications;
- i. Cystic Fibrosis (CF)
 - ii. Chronic bronchitis
 - iii. Bronchiectasis
 - iv. Immotile cilia syndrome (also known as primary ciliary dyskinesia)
 - v. Asthma
- D. **High-frequency chest compression systems** are considered experimental and investigational for other indications (e.g., alpha 1-antitrypsin deficiency, childhood atelectasis, cerebral palsy, coma, kyphosis, leukodystrophy, scoliosis, and stiff-person {stiff-man} syndrome; not an all-inclusive list) because their effectiveness for these indications has not been established.
- E. **Intrapulmonary percussive ventilators** (e.g. the Impulsator F00012) are considered experimental and investigational for all indications because there is insufficient evidence supporting their effectiveness.
- F. **Mechanical in-exsufflation devices** are considered medically necessary for patients with a neuromuscular disease (e.g., amyotrophic lateral sclerosis, high spinal cord injury with quadriplegia) that is causing a significant impairment of chest wall and/or diaphragmatic movement and for whom standard treatments (e.g., chest percussion and postural drainage, etc.) have not been successful in adequately mobilizing retained secretions.

III. Information Submitted with the Prior Authorization Request:

1. Chart notes documenting diagnosis and all treatments
2. Pulmonary function test
3. Reports of imaging studies

IV. CPT or HCPC codes covered:

Codes	Description
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
E0480	Percussor, electric or pneumatic, home model
E0481	Intrapulmonary percussive ventilation system and related accessories
E0482	Cough stimulating device, alternating positive and negative airway pressure
E0483	High frequency chest wall oscillation system, includes all accessories and supplies, each
E0484	Oscillatory positive expiratory pressure device, non-electric, any type, each
E0656	Segmental pneumatic appliance for use with pneumatic compressor, trunk
E0657	Segmental pneumatic appliance for use for use with pneumatic compressor, chest

V. Annual Review History

Review Date	Revisions	Effective Date
05/2015	New criteria adopted from CMS national and/or regional guideline	07/01/2015
07/2016	Annual Review: Reviewed to match Noridian L33785 for HFCWO	07/27/2016
07/2017	Annual Review: No Changes	07/26/2017
03/2019	Annual Review: Minor wording changes	04/01/2019
03/2020	Annual Review: Rewording and formatted to remove duplicated language, updated codes	04/01/2020
03/2021	Annual Review: No changes	04/01/2021
03/2022	Annual Review: No changes	04/01/2022
03/2023	Annual Review: No changes	04/01/2023

VI. References

1. CMS Local Coverage Determination for High Frequency Chest Wall Oscillation Devices L33785; Noridian Healthcare Solutions, LLC; Revision date 10/01/2015; effective date 10/31/2014;
2. Hippokratia 2008 Oct-Dec; 12(4): 211-220; Current devices of Respiratory physiotherapy; <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2580042/>
3. Hayes, Inc. Medical technology Directory. High-Frequency Chest Wall Compression for cystic Fibrosis. Lansdale, PA: Hayes, Inc., May 3, 2012

4. Lange DJ, Lechtzin N, Davey C, David W, Heiman-Patterson T, Gelinas D, Becker B, Mitsumoto H; HFCWO Study Group. High-frequency chest wall oscillation in ALS: an exploratory randomized, controlled trial. *Neurology*. 2006 Sep 26; 67(6):991-7
5. American Association for Respiratory Care (AARC). AARC clinical practice guidelines. Postural drainage therapy. *Respir Care*. 1991;36(12):1418-1426
6. Advanced Respiratory. The Vest Airway Clearance System [website]. St.
7. Paul, MN: Advanced Respiratory; 2003. Available at: <http://www.abivest.com/>. Accessed February 28, 2003.
8. Langenderfer B. Alternatives to percussion and postural drainage. A review of mucus clearance 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;18(4):283-289.
9. CMS Local Coverage Article: High Frequency Chest Wall oscillation Devices-Policy Article-Effective October 2014 (A25365); Noridian Healthcare Solutions; Accessed 07/2017

Appendix 1 – Applicable ICD-10 diagnosis codes:

Codes	Description
A15.0	Tuberculosis of lung
A15.4	Tuberculosis of intrathoracic lymph nodes
A15.5	Tuberculosis of larynx, trachea and bronchus
A15.6	Tuberculous pleurisy
A15.8	Other respiratory tuberculosis
A15.9	Respiratory tuberculosis unspecified
B91	Sequelae of poliomyelitis
G14	Postpolio syndrome
E84.9	Cystic fibrosis, unspecified
E84.0	Cystic fibrosis with pulmonary manifestations
D84.1	Defects in the complement system
G35	Multiple sclerosis
G95.0	Syringomyelia and syringobulbia
G12.8	Other spinal muscular atrophies and related syndromes
G12.9	Spinal muscular atrophy, unspecified
G82.51	Quadriplegia, C1-C4 complete
G82.52	Quadriplegia, C1-C4 incomplete
G82.53	Quadriplegia, C5-C7 complete
G82.54	Quadriplegia, C5-C7 incomplete
G82.50	Quadriplegia, unspecified
G71.2	Congenital myopath
G71.0	Muscular dystrophy
G71.11	Myotonic muscular dystrophy
G71.12	Myotonia congenita
G71.13	Myotonic chondrodystrophy
G71.14	Drug induced myotonia

G71.19	Other specified myotonic disorders
G72.2	Myopathy due to other toxic agents
G73.7	Myopathy in diseases classified elsewhere
G72.89	Other specified myopathies
J47.9	Bronchiectasis, uncomplicated
J47.1	Bronchiectasis with (acute) exacerbation
J98.6	Disorders of diaphragm
Q33.9	Congenital bronchiectasis

Appendix 1 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD) and Local Coverage Determinations (LCDs) may exist and compliance with these policies is required where applicable. They can be found at: <http://www.cms.gov/medicare-coverage-database/search/advanced-search.aspx>. Additional indications may be covered at the discretion of the health plan.

Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD):

Jurisdiction(s): 5, 8	NCD/LCD Document (s):
Noridian Local Coverage Determination LCD 33785 High Frequency Chest Wall Oscillation Device	
https://med.noridianmedicare.com/documents/2230703/7218263/High+Frequency+Chest+Wall+Oscillation+Devices/2c8213bc-6773-4dcf-9fa5-80557b80b888	

NCD/LCD Document (s):
Noridian Local Coverage Determination High Frequency Chest Wall Oscillation Devices – Policy Article (A52494)

Medicare Part B Administrative Contractor (MAC) Jurisdictions		
Jurisdiction	Applicable State/US Territory	Contractor
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC