Airway Clearance Devices (for Kansas Only)

Policy Number: CS054KS.03
Effective Date: April 1, 2026

➲ Instructions for Use

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Related Policy

- Durable Medical Equipment, Orthotics, Medical Supplies, and Repairs/Replacements (for Kansas Only)

Application

This Medical Policy only applies to the state of Kansas.

Coverage Rationale

For medical necessity clinical coverage criteria for a high frequency chest wall oscillation system, refer to the Kansas Medical Assistance Program, Durable Medical Equipment Fee-for-Service Provider Manual.

For medical necessity clinical coverage criteria for an intrapulmonary percussive ventilation system, refer to the InterQual® CP: Durable Medical Equipment, Airway or Secretion Clearance Devices.

Click here to view the InterQual® criteria.

Combination continuous positive expiratory pressure, continuous high-frequency oscillation, and nebulized medication therapy devices for oscillation and lung expansion are considered unproven and not medically necessary.

Medical Records Documentation Used for Reviews

Benefit coverage for health services is determined by the federal, state, or contractual requirements, and applicable laws that may require coverage for a specific service. Medical records documentation may be required to assess whether the member meets the clinical criteria for coverage but does not guarantee coverage of the services requested.

The patient's medical record must contain documentation that fully supports the medical necessity for the requested services. This documentation includes, but is not limited to, relevant medical history, physical examination, and results of pertinent diagnostic tests or procedures. Documentation supporting the medical necessity should be legible, maintained in the patient's medical record, and must be made available upon request.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by federal, state, or contractual requirements and

applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

HCPCS Code	Description
A7021	Supplies and accessories for lung expansion airway clearance, continuous high frequency oscillation, and nebulization device (e.g., handset, nebulizer kit, biofilter)
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
E0481	Intrapulmonary percussive ventilation system and related accessories
E0483	High frequency chest wall oscillation system, with full anterior and/or posterior thoracic region receiving simultaneous external oscillation, includes all accessories and supplies, each
E0469	Lung expansion airway clearance, continuous high frequency oscillation, and nebulization device

Diagnosis Code	Description
A80.0	Acute paralytic poliomyelitis, vaccine-associated
A80.1	Acute paralytic poliomyelitis, wild virus, imported
A80.2	Acute paralytic poliomyelitis, wild virus, indigenous
A80.30	Acute paralytic poliomyelitis, unspecified
A80.39	Other acute paralytic poliomyelitis
A80.4	Acute nonparalytic poliomyelitis
A80.9	Acute poliomyelitis, unspecified
B91	Sequelae of poliomyelitis
E74.02	Pompe disease
E74.4	Disorders of pyruvate metabolism and gluconeogenesis
E84.0	Cystic fibrosis with pulmonary manifestations
E84.9	Cystic fibrosis, unspecified
G12.0	Infantile spinal muscular atrophy, type I [Werdnig-Hoffman]
G12.1	Other inherited spinal muscular atrophy
G12.9	Spinal muscular atrophy, unspecified
G12.21	Amyotrophic lateral sclerosis
G12.22	Progressive bulbar palsy
G12.25	Progressive spinal muscle atrophy
G12.8	Other spinal muscular atrophies and related syndromes
G14	Post-polio syndrome
G35.A	Relapsing-remitting multiple sclerosis
G35.B0	Primary progressive multiple sclerosis, unspecified
G35.B1	Active primary progressive multiple sclerosis
G35.B2	Non-Active primary progressive multiple sclerosis
G35.C0	Secondary progressive multiple sclerosis, unspecified
G35.C1	Active secondary progressive multiple sclerosis
G35.C2	Non-active secondary progressive multiple sclerosis
G35.D	Multiple sclerosis, unspecified
G71.00	Muscular dystrophy, unspecified
G71.036	Limb girdle muscular dystrophy due to fukutin related protein dysfunction
G71.11	Myotonic muscular dystrophy
G71.20	Congenital myopathy, unspecified

Diagnosis Code	Description
G71.21	Nemaline myopathy
G71.220	X-linked myotubular myopathy
G71.228	Other centronuclear myopathy
G71.29	Other congenital myopathy
G71.3	Mitochondrial myopathy, not elsewhere classified
G71.8	Other primary disorders of muscles
G72.41	Inclusion body myositis [IBM]
G72.89	Other specified myopathies
G73.1	Lambert-Eaton syndrome in neoplastic disease
G73.3	Myasthenic syndromes in other diseases classified elsewhere
G73.7	Myopathy in diseases classified elsewhere
G80.0	Spastic quadriplegic cerebral palsy
G82.50	Quadriplegia, 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
J47.0	Bronchiectasis with acute lower respiratory infection
J47.1	Bronchiectasis with (acute) exacerbation
J47.9	Bronchiectasis, uncomplicated
J98.6	Disorders of diaphragm
M33.02	Juvenile dermatomyositis with myopathy
M33.12	Other dermatomyositis with myopathy
M33.22	Polymyositis with myopathy
M33.92	Dermatopolymyositis, unspecified with myopathy
M34.82	Systemic sclerosis with myopathy
M35.03	Sicca syndrome with myopathy
Q33.4	Congenital bronchiectasis
R53.2	Functional quadriplegia
Z99.11	Dependence on respirator [ventilator] status

Clinical Evidence

Combination Continuous Positive Expiratory Pressure, Continuous High-Frequency Oscillation, and Nebulized Medication Therapy Devices for Oscillation and Lung Expansion

Due to insufficient quality evidence or consistency of findings, combination continuous PEP, continuous high-frequency oscillation, and nebulized medication therapy devices for oscillation and lung expansion (OLE) are considered unproven and not medically necessary.

Main and Rand (2023) conducted a systematic review and meta-analysis to evaluate the effectiveness (in terms of respiratory function, respiratory exacerbations, and exercise capacity) and acceptability (in terms of individual preference, adherence, and quality of life) of conventional CPT (CCPT) for people with cystic fibrosis compared with alternative ACTs. The authors included randomized or quasirandomized controlled trials (including crossover design) that lasted at least 7 days and compared CCPT with alternative ACTs in people with cystic fibrosis. The primary outcomes were (1) pulmonary function tests and (2) number of respiratory exacerbations per year. The secondary outcomes were (1) quality of life, (2) adherence to therapy, (3) cost-benefit analysis, (4) objective change in exercise capacity, (5) additional lung function tests, (6) ventilation scanning, (7) blood oxygen levels, (8) nutritional status, (9) mortality, (10) mucus transport rate, and (11) mucus wet or dry weight. Outcomes were reported as short term (7-20 days), medium term (more than 20 days to up

to 1 year), and long term (over 1 year). A total of 21 (778 individuals) studies comprising seven short-term, eight medium-term, and six long-term studies were included. Studies were conducted in the US (10), Canada (five), Australia (two), the UK (two), Denmark (one), and Italy (one), with a median of 23 individuals per study (range, 13-166 individuals). Individuals' ages ranged from newborns to 45 years; most studies only recruited children and young people. Sixteen studies reported the sex of individuals (375 male; 296 female). Most studies compared modifications of CCPT with a single comparator, but two studies compared three interventions, and another compared four interventions. The interventions varied in the duration of treatments, times per day, and periods of comparison, making meta-analysis challenging. All evidence was very low certainty. Overall, 19 studies reported the primary outcomes of FEV_1 and FVC and found no difference in change from baseline in FEV_1 percent predicted or rate of decline between groups for either measure. Most studies suggested equivalence between CCPT and alternative ACTs, including PEP, extrapulmonary mechanical percussion, ACBT, O-PEP devices, autogenic drainage, and exercise. Where single studies suggested superiority of one ACT, these findings were not corroborated in similar studies; pooled data generally concluded that the effects of CCPT were comparable to those of alternative ACTs. Regarding CCPT vs PEP, the authors are uncertain whether CCPT improves lung function or has an impact on the number of respiratory exacerbations per year compared with PEP (both very low-certainty evidence). There were no analyzable data for secondary outcomes, but many studies provided favorable narrative reports on the independence achieved with PEP mask therapy. Regarding CCPT vs extrapulmonary mechanical percussion, the authors are uncertain whether CCPT improves lung function compared with extrapulmonary mechanical percussions (very low-certainty evidence). The annual rate of decline in average forced expiratory flow between 25% and 75% of FVC (FEF_{25-75}) was greater with high-frequency chest compression than CCPT in medium- to long-term studies, but there was no difference in any other outcome. Regarding CCPT vs ACBT, the authors are uncertain whether CCPT improves lung function compared with ACBT (very low-certainty evidence). The annual decline in FEF^{25-75} was worse in individuals who were using the forced expiration technique component of ACBT only [mean difference (MD), 6.00; 95% CI, 0.55-11.45; one study, 63 individuals; very low-certainty evidence]. One short-term study reported that directed coughing was as effective as CCPT for all lung function outcomes but with no analyzable data. One study found no difference in hospital admissions and days in hospital for exacerbations. Regarding CCPT vs O-PEP, the authors are uncertain whether CCPT improves lung function compared with O-PEP devices (Flutter device and IPV); however, only one study provided analyzable data (very low-certainty evidence). No study reported data for the number of exacerbations. There was no difference in results for the number of days in hospital for an exacerbation, number of hospital admissions, and number of days of intravenous antibiotics; this was also true for other secondary outcomes. Regarding CCPT vs autogenic drainage, the authors are uncertain whether CCPT improves lung function compared with autogenic drainage (very low-certainty evidence). No studies reported the number of exacerbations per year; however, one study reported more hospital admissions for exacerbations in the CCPT group (MD, 0.24; 95% CI, 0.06-0.42; 33 individuals). One study provided a narrative report of a preference for autogenic drainage. Regarding CCPT vs exercise, the authors are uncertain whether CCPT improves lung function compared with exercise (very low-certainty evidence). An analysis of original data from one study demonstrated a higher FEV_1 percent predicted (MD, 7.05; 95% CI, 3.15-10.95; p = 0.0004), FVC (MD, 7.83; 95% CI, 2.48-13.18; p = 0.004), and FEF_{25-75} (MD, 7.05; 95% CI, 3.15-10.95; p = 0.0004) in the CCPT group; however, the study reported no difference between groups (likely because the original analysis accounted for baseline differences). The authors concluded that they are uncertain whether CCPT has a more positive impact on respiratory function, respiratory exacerbations, individual preference, adherence, quality of life, exercise capacity, and other outcomes compared with alternative ACTs, as the certainty of the evidence is very low. There was no advantage in respiratory function of CCPT over alternative ACTs, but this may reflect insufficient evidence rather than real equivalence. Narrative reports indicated that individuals prefer self-administered ACTs. This review is limited by a paucity of well-designed, adequately powered, long-term studies. This review cannot yet recommend any single ACT above others; physiotherapists and people with cystic fibrosis may wish to try different ACTs until they find an ACT that suits them best.

Morrison and Milroy (2020) conducted a systematic review and meta-analysis to identify whether oscillatory devices, oral or chest wall, are effective for mucociliary clearance and whether they are equivalent or superior to other forms of airway clearance in the successful management of secretions in people with cystic fibrosis. Search criteria included RCTs and controlled clinical studies of oscillating devices compared with any other form of physiotherapy in people with cystic fibrosis. Single-treatment interventions (therapy technique used only once in the comparison) were excluded. Two authors independently applied the inclusion criteria to publications, assessed the quality of the included studies, and assessed the evidence using GRADE (Grading of Recommendations Assessment, Development, and Evaluation). The searches identified 82 studies (330 references); 39 studies (total of 1,114 individuals) met the inclusion criteria. Studies varied in duration from up to 1 week to 1 year; 20 of the studies were crossover in design. The studies also varied in type of intervention and the outcomes measured; data were not published in sufficient detail in most of these studies, so meta-analysis was limited. Few studies were considered to have a low risk of bias in any domain. It is not possible to blind individuals and clinicians to physiotherapy interventions, but 13 studies did blind the outcome assessors. The quality of the evidence across all comparisons ranged from low to very low. FEV_1 was the most frequently measured outcome, and while many of the studies reported an improvement in those people using a vibrating device compared with before the

study, there were few differences when comparing the different devices to each other or to other ACTs. One study identified an increase in frequency of exacerbations requiring antibiotics while using HFCWO compared with PEP (low-quality evidence). There were some small but significant changes in secondary outcome variables such as sputum volume or weight but not wholly in favor of oscillating devices, and due to the low- or very low-quality evidence, it is not clear whether these were due to the particular intervention. Individuals' satisfaction was reported in 13 studies but again with low- or very low-quality evidence and not consistently in favor of an oscillating device, as some individuals preferred breathing techniques or techniques used prior to the study interventions. The results for the remaining outcome measures were not examined or reported in sufficient detail to provide any high-level evidence. The authors concluded that there was no clear evidence that oscillation was a more or less effective intervention overall than other forms of physiotherapy; furthermore, there was no evidence that one device was superior to another. The findings from one study that showed an increase in the frequency of exacerbations requiring antibiotics while using an oscillating device compared with PEP may have significant resource implications. More adequately powered, long-term RCTs are necessary, and the outcomes measured should include frequency of exacerbations, individual preference, adherence to therapy, and general satisfaction with treatment. Increased adherence to therapy may then lead to improvements in other parameters, such as exercise tolerance and respiratory function. Additional evidence is needed to evaluate whether oscillating devices combined with other forms of airway clearance are efficacious in people with cystic fibrosis. There may also be a requirement to consider the cost implication of devices over other forms of equally advantageous ACTs. Using the GRADE method to assess the quality of the evidence, we judged this to be low or very low quality, which suggests that further research is very likely to have an impact on confidence in any estimate of effect that is generated by future interventions.

Huynh et al. (2019) conducted a multicenter, nonrandomized, prospective study to examine the impact of OLE therapy using continuous high-frequency oscillation and continuous PEP on postoperative pulmonary complications (PPCs) in high-risk participants. In stage I, Current Procedural Terminology and International Classification of Diseases codes were queried for participants (n = 210) who were undergoing thoracic, upper abdominal, or aortic open procedures at three institutions from December 2014 to April 2016. Participants were selected randomly. Age, comorbidities, American Society of Anesthesiologists Physical Status Classification scores, and PPC rates were determined. In stage II, 209 participants were enrolled prospectively from October 2016 to July 2017 using the same criteria. Stage II participants received OLE treatment and standard respiratory care. The PPCs rate [prolonged ventilation, high-level respiratory support, pneumonia, and intensive care unit (ICU) readmission] was compared. The authors also compared ICU length of stay, hospital length of stay, and mortality using t tests and analysis of covariance. Data are mean ±SD. There were 419 participants. Stage II participants were older (61.1 ±13.7 years vs 57.4 ±15.5 years; $p < 0.05$) and had higher American Society of Anesthesiologists scores. Treatment with OLE decreased PPCs from 22.9% (stage I) to 15.8% (stage II) ($p < 0.01$ adjusted for age, American Society of Anesthesiologists score, and operation time). Similarly, OLE treatment reduced ventilator time (23.7 ±107.5 hours to 8.5 ±27.5 hours; $p < 0.05$) and hospital length of stay (8.4 ±7.9 days to 6.8 ±5.0 days; $p < 0.05$). No differences in ICU length of stay, pneumonia, or mortality were observed. The authors concluded that aggressive treatment with OLE reduces PPCs and resource use in high-risk surgical individuals. Well-designed, adequately powered, prospective, controlled clinical trials in combination OLE treatment are needed to further describe safety and clinical efficacy.

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

High-Frequency Chest Wall Compression Devices

High-frequency chest wall compression devices are designed to promote airway clearance and improve bronchial drainage. They are indicated when external chest manipulation is the physician's treatment of choice to enhance mucus transport. Refer to the following website for more information (use product code BYI): http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmn.cfm. (Accessed October 14, 2025)

References

Huynh TT, Liesching TN, Cereda M, et al. Efficacy of oscillation and lung expansion in reducing postoperative pulmonary complication. J Am Coll Surg. 2019 Nov;229(5):458-466.e1.

Kansas Medical Assistance Program Durable Medical Equipment Fee-for-Service Provider Manual. Available at: https://portal.kmap-state-ks.us/Documents/Provider/Provider%20Manuals/DME_25204_25201.pdf. Accessed December 8, 2025.

Main E, Rand S. Conventional chest physiotherapy compared to other airway clearance techniques for cystic fibrosis. Cochrane Database Syst Rev. 2023 May 5;5(5):CD002011.

Morrison L, Milroy S. Oscillating devices for airway clearance in people with cystic fibrosis. Cochrane Database Syst Rev. 2020 Apr 30;4(4):CD006842.

Policy History/Revision Information

Date	Summary of Changes

04/01/2026	**Coverage Rationale**
	• Added language to indicate combination continuous positive expiratory pressure, continuous high-frequency oscillation, and nebulized medication therapy devices for oscillation and lung expansion are considered unproven and not medically necessary
	Medical Records Documentation Used for Reviews
	• Added language to indicate:
	  ○ Benefit coverage for health services is determined by the federal, state, or contractual requirements, and applicable laws that may require coverage for a specific service
	  ○ Medical records documentation may be required to assess whether the member meets the clinical criteria for coverage but does not guarantee coverage of the service requested
	  ○ The patient's medical record must contain documentation that fully supports the medical necessity for the requested services
	  ○ This documentation includes but is not limited to relevant medical history, physical examination, and results of pertinent diagnostic tests or procedures
	  ○ Documentation supporting the medical necessity should be legible, maintained in the patient's medical record, and must be made available upon request
	Applicable Codes
	• Added HCPCS codes A7021 and E0469
	• Added ICD-10 diagnosis codes A80.0, A80.1, A80.2, A80.30, A80.39, A80.4, A80.9, B91, E74.02, E74.4, E84.0, E84.9, G12.0, G12.1, G12.9, G12.21, G12.22, G12.25, G12.8, G14, G71.00, G71.11, G71.20, G71.21, G71.220, G71.228, G71.29, G71.3, G71.8, G72.41, G72.89, G73.1, G73.3, G73.7, G80.0, G82.50, G82.51, G82.52, G82.53, G82.54, J47.0, J47.1, J47.9, J98.6, M33.02, M33.12, M33.22, M33.92, M34.82, M35.03, Q33.4, R53.2, and Z99.11
	Supporting Information
	• Added *Clinical Evidence* section
	• Updated *Description of Services* and *References* sections to reflect the most current information
	• Archived previous policy version CS054KS.02

Instructions for Use

This Medical Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state, or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state, or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state, or contractual requirements for benefit plan coverage govern. Before using this policy, check the federal, state, or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its policies and guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

UnitedHealthcare uses InterQual® for the primary medical/surgical criteria, and the American Society of Addiction Medicine (ASAM) criteria for substance use disorder (SUD) services, in administering health benefits. If InterQual® does not have applicable criteria, UnitedHealthcare may also use UnitedHealthcare Medical Policies that have been approved by the Kansas Department of Health and Environment. The UnitedHealthcare Medical Policies are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.