

Home Mechanical Ventilation Devices

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Introduction

This guideline addresses home mechanical ventilation devices.

Health Equity Consideration

Health equity is the highest level of health for all individuals; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which individuals are born, grow, live, work, and age. Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include the following: safe housing, transportation, and neighborhoods; racism, discrimination, and violence; education, job opportunities, and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Criteria

A home ventilator used with invasive interface or a home ventilator used with a noninvasive interface is considered medically necessary for an individual with respiratory failure when **all** of the following criteria are met:

- The individual has documentation of **any** of the following:
 - obstructive pulmonary condition(s) (e.g., severe Chronic Obstructive Pulmonary Disease [COPD] with hypercapnia, cystic fibrosis, or bronchiectasis)
 - neuromuscular or neurologic condition(s)
 - restrictive pulmonary condition(s)
 - obesity hypoventilation syndrome (OHS)
 - other medical condition causing chronic hypoventilation
 - chronic lung disease of infancy, including bronchopulmonary dysplasia
 - obstructive sleep apnea in a pediatric individual
- The individual's respiratory status is unchanged or is stable.
- The home environment is safe for ventilator use.
- A trained caregiver(s) is available to assist with ventilator use.
- CPAP or BiPAP treatment is determined to **not** be appropriate as indicated by **any** of the following:

- CPAP or BiPAP was ruled out due to clinical severity.
- CPAP or BiPAP was trialed and found ineffective (i.e., persistent hypercapnia, intolerable symptoms).
- Settings or functionality required by the individual could not be provided with CPAP or BiPAP.
- CPAP or or BiPAP device does not meet minimum body requirements.
- Alarms required by the individual are not available on bilevel positive pressure respiratory assistance device for the individual.

A multi-function home ventilator is considered medically necessary when the general coverage criteria for a standard home ventilator above are met and the documentation supports a management plan requiring **any** of the following devices:

- oxygen concentrator
- cough stimulator
- suction pump
- nebulizer

Initial Rental Timeframe

- Initial rental timeframe is **twelve months**.

Continued Use

The continued use of a home ventilator for up to an additional twelve months rental is considered medically necessary when there is documentation of **both** the following:

- The individual has been re-evaluated by the treating practitioner.
- There is documentation of continued benefit and medical need.

Additional Information

A primary and a secondary ventilator are considered medically necessary if each is serving a different medical or functional purpose.

Examples of indicated scenarios including, but not limited, to **any** of the following:

- One type of ventilator (e.g., a negative pressure ventilator with a chest shell) is required for part of the day and a different type of ventilator (e.g., positive pressure ventilator with a nasal mask) is required during the rest of the day.
- A portable ventilator is mounted on the wheelchair for use during the day and individual requires a stationary ventilator for use while in bed.
- The individual lives in an area where a replacement ventilator cannot be provided within two hours.

Not Medically Necessary

A home ventilator is considered not medically necessary when the above criteria are not met and for all other conditions, including, but not limited to the following:

- chronic stable COPD *without* hypercapnia
- central sleep apnea of heart failure

Background and Supporting Information

Term	Definition
Apnea-hypopnea index (AHI)	Average number of episodes of apnea and hypopnea per hour of sleep without the use of a positive airway pressure device.
Average Volume Assured Pressure Support: (AVAPS-AE)	AVAPS-AE is a bi-level therapy mode used with the FDA-approved Trilogy series of devices that automatically adjusts Expiratory Positive Airway Pressure (EPAP), pressure support, and the backup breath rate. AVAPS-AE automatically adjusts EPAP to maintain a patent airway. It also monitors delivered tidal volume and adjusts pressure support accordingly to provide the average target tidal volume. AVAPS-AE has the ability to maintain a backup breath rate based on the individual's own spontaneous breathing rate.

Evidence Discussion

Codes Addressed in This Guideline

The inclusion of any code in this table does not imply that the code is under management or requires prior authorization. Refer to the applicable health plan for management details. Prior authorization of a code listed in this table is not a guarantee of payment. The Certificate of Coverage or Evidence of Coverage policy outlines the terms and conditions of the member's health insurance policy.

HCPCS	Description
E0465	Home ventilator, any type, used with invasive interface, (e.g., tracheostomy tube)
E0466	Home ventilator, any type, used with noninvasive interface, (e.g., mask, chest shell)
E0467	Home ventilator, multi-function respiratory device, also performs any or all of the additional functions of oxygen concentration, drug nebulization, aspiration, and cough stimulation, includes all accessories, components and supplies for all functions

References

1. NCD - Durable Medical Equipment Reference List (280.1). [www.cms.gov](https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCID=190). <https://www.cms.gov/medicare-coverage-database/view/ncd.aspx?NCID=190>.
2. AARC; Respiratory Home Care Focus Group. AARC clinical practice guideline. Long-term invasive mechanical ventilation in the home--2007 revision & update. *Respir Care*. 2007;52(8):1056-1062.
3. Sterni LM, Collaco JM, Baker CD, et al. An Official American Thoracic Society Clinical Practice Guideline: Pediatric Chronic Home Invasive Ventilation. *Am J Respir Crit Care Med*. 2016;193(8):e16-e35. doi:10.1164/rccm.201602-0276ST.
4. Pearson SD, Koyner JL, Patel BK. Management of Respiratory Failure: Ventilator Management 101 and Noninvasive Ventilation. *Clin J Am Soc Nephrol*. 2022;17(4):572-580. doi:10.2215/CJN.13091021.
5. Macrea M, Oczkowski S, Rochweg B, et al. Long-Term Noninvasive Ventilation in Chronic Stable Hypercapnic Chronic Obstructive Pulmonary Disease. An Official American Thoracic Society Clinical Practice Guideline. *Am J Respir Crit Care Med*. 2020;202(4):e74-e87. doi:10.1164/rccm.202006-2382ST.
6. Köhnlein T, Windisch W, Köhler D, et al. Non-invasive positive pressure ventilation for the treatment of severe stable chronic obstructive pulmonary disease: a prospective, multicentre, randomised, controlled clinical trial. *Lancet Respir Med*. 2014;2(9):698-705. doi:10.1016/S2213-2600(14)70153-5.
7. Sterni LM, Collaco JM, Baker CD, et al. An Official American Thoracic Society Clinical Practice Guideline: Pediatric Chronic Home Invasive Ventilation. *Am J Respir Crit Care Med*. 2016;193(8):e16-e35. doi:10.1164/rccm.201602-0276ST.
8. GOLD. Global Initiative for Chronic Obstructive Lung Disease - Global Initiative for Chronic Obstructive Lung Disease - GOLD. Global Initiative for Chronic Obstructive Lung Disease - GOLD. Published 2019. <https://goldcopd.org>.
9. Raveling T, Vonk J, Struik FM, et al. Chronic non-invasive ventilation for chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2021;8(8):CD002878. Published 2021 Aug 9. doi:10.1002/14651858.CD002878.pub3.
10. Wu Z, Luo Z, Luo Z, et al. Baseline Level and Reduction in PaCO₂ are Associated with the Treatment Effect of Long-Term Home Noninvasive Positive Pressure Ventilation in Stable Hypercapnic Patients with COPD: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Int J Chron Obstruct Pulmon Dis*. 2022;17:719-733. Published 2022 Apr 6. doi:10.2147/COPD.S344962.
11. Chronic obstructive pulmonary disease in over 16s: diagnosis and management. London: National Institute for Health and Care Excellence (NICE); July 2019.
12. Radunovic A, Annane D, Rafiq MK, Brassington R, Mustfa N. Mechanical ventilation for amyotrophic lateral sclerosis/motor neuron disease. *Cochrane Database Syst Rev*. 2017;10(10):CD004427. Published 2017 Oct 6. doi:10.1002/14651858.CD004427.pub4.

13. Hull J, Aniapravan R, Chan E, et al. British Thoracic Society guideline for respiratory management of children with neuromuscular weakness. *Thorax*. 2012;67 Suppl 1:i1-i40. doi:10.1136/thoraxjnl-2012-201964.
14. Klingenberg C, Wheeler KI, McCallion N, Morley CJ, Davis PG. Volume-targeted versus pressure-limited ventilation in neonates. *Cochrane Database Syst Rev*. 2017;10(10):CD003666. Published 2017 Oct 17. doi:10.1002/14651858.CD003666.pub4.
15. Birnkrant DJ, Bushby KM, Amin RS, et al. The respiratory management of patients with duchenne muscular dystrophy: a DMD care considerations working group specialty article. *Pediatr Pulmonol*. 2010;45(8):739-748. doi:10.1002/ppul.21254.
16. Wang CH, Finkel RS, Bertini ES, et al. Consensus statement for standard of care in spinal muscular atrophy. *J Child Neurol*. 2007;22(8):1027-1049. doi:10.1177/0883073807305788.
17. Hannan LM, Dominelli GS, Chen YW, Darlene Reid W, Road J. Systematic review of non-invasive positive pressure ventilation for chronic respiratory failure. *Respir Med*. 2014;108(2):229-243. doi:10.1016/j.rmed.2013.11.010.
18. Bach JR. Noninvasive Respiratory Management of Patients With Neuromuscular Disease. *Ann Rehabil Med*. 2017;41(4):519-538. doi:10.5535/arm.2017.41.4.519.
19. Rimmer K, Respirology, Calgary. *HOME MECHANICAL VENTILATION in CANADA: WHERE WE WERE and WHERE WE ARE NOW*. Accessed February 6, 2024. <https://cts-sct.ca/wp-content/uploads/2018/04/Rimmer-K.pdf>.
20. Masa JF, Mokhlesi B, Benítez I, et al. Long-term clinical effectiveness of continuous positive airway pressure therapy versus non-invasive ventilation therapy in patients with obesity hypoventilation syndrome: a multicentre, open-label, randomised controlled trial. *Lancet*. 2019;393(10182):1721-1732. doi:10.1016/S0140-6736(18)32978-7.
21. Baker CD. Long-term ventilation for children with chronic lung disease of infancy. *Curr Opin Pediatr*. 2019;31(3):357-366. doi:10.1097/MOP.0000000000000757.
22. Cristea AI, Carroll AE, Davis SD, Swigonski NL, Ackerman VL. Outcomes of children with severe bronchopulmonary dysplasia who were ventilator dependent at home. *Pediatrics*. 2013;132(3):e727-e734. doi:10.1542/peds.2012-2990.
23. Klingenberg C, Wheeler KI, McCallion N, Morley CJ, Davis PG. Volume-targeted versus pressure-limited ventilation in neonates. *Cochrane Database Syst Rev*. 2017;10(10):CD003666. Published 2017 Oct 17. doi:10.1002/14651858.CD003666.pub4.
24. Kaminska, M., Adam, V., & Orr, J. E. (2024). Home noninvasive ventilation in COPD: How I do it. *CHEST*, 165(6), 1372–1379. <https://doi.org/10.1016/j.chest.2023.11.020>
25. Dolinay, T., Hsu, L., Maller, A., Walsh, B. C., Szűcs, A., Jerng, J.-S., & Jun, D. (2024). Ventilator weaning in prolonged mechanical ventilation: A narrative review. *Journal of Clinical Medicine*, 13(7), 1909. <https://doi.org/10.3390/jcm13071909>
26. Tregidgo, L., Naran, P., Gosal, E., D'Cruz, R. F., & others. (2024). Update in noninvasive home mechanical ventilation: Indications, outcomes, and monitoring. *Canadian Respiratory Journal*, 2024, Article 7013576. <https://doi.org/10.1155/2024/7013576>
27. Wilson, M., Wang, Z., Dobler, C. C., Morrow, A. S., Beuschel, B. S. P. H., Alsawas, M., Benkhadra, R., Seisa, M., Mittal, A., Sanchez, M., Daraz, L., Holets, S., & Murad, M. H. (2020). Noninvasive positive pressure ventilation in the home (with addendum). Agency for Healthcare Research and Quality (US). <https://www.ncbi.nlm.nih.gov/books/NBK576007/>