

# Lung Volume Reduction Surgery (Reduction Pneumoplasty) (NCD 240.1)

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[➔ Terms and Conditions](#)

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## Related Medicare Advantage Coverage Summary

- [Lung Volume Reduction Surgery \(LVRS\)](#)

## Policy Summary

[➔ See Purpose](#)

### Overview

Lung volume reduction surgery (LVRS) or reduction pneumoplasty, also referred to as lung shaving or lung contouring, is performed on patients with severe emphysema in order to allow the remaining compressed lung to expand, and thus, improve respiratory function. Medicare-covered LVRS approaches are limited to bilateral excision of a damaged lung with stapling performed via median sternotomy or video-assisted thoracoscopic surgery.

### Reimbursement Guidelines

#### Nationally Covered Indications

Effective for services performed on or after January 1, 2004 Medicare will only consider LVRS reasonable and necessary when all of the following requirements are met (note varying dates for facility criteria in section 3. below):

- The patient satisfies all the assessment criteria outlined below:
  - History and physical examination:
    - Consistent with emphysema
    - BMI,  $\leq 31.1$  kg/m<sup>2</sup> (men) or  $\leq 32.3$  kg/m<sup>2</sup> (women)
    - Stable with  $\leq 20$  mg prednisone (or equivalent) qd
  - Radiographic: High Resolution Computer Tomography (HRCT) scan evidence of bilateral emphysema
  - Pulmonary function (pre-rehabilitation):
    - Forced expiratory volume in one second (FEV<sub>1</sub>)  $\leq 45\%$  predicted  $\geq 15\%$  predicted if age  $\geq 70$  years)
    - Total lung capacity (TLC)  $\geq 100\%$  predicted post-bronchodilator
    - Residual volume (RV)  $\geq 150\%$  predicted post-bronchodilator
  - Arterial blood gas level (pre-rehabilitation):
    - PCO<sub>2</sub>,  $\leq 60$  mm Hg (PCO<sub>2</sub>,  $\leq 55$  mm Hg if 1-mile above sea level)
    - PO<sub>2</sub>,  $\geq 45$  mm Hg on room air ( PO<sub>2</sub>,  $\geq 30$  mm Hg if 1-mile above sea level)
  - Cardiac assessment: Approval for surgery by cardiologist if any of the following are present: Unstable angina; left-ventricular ejection fraction (LVEF) cannot be estimated from the echocardiogram; LVEF  $<45\%$ ; dobutamine-radiionuclide cardiac scan indicates coronary artery disease or ventricular dysfunction; arrhythmia ( $>5$  premature

- ventricular contractions per minute; cardiac rhythm other than sinus; premature ventricular contractions on EKG at rest)
- Surgical assessment: Approval for surgery by pulmonary physician, thoracic surgeon, and anesthesiologist post-rehabilitation
- Exercise: Post-rehabilitation 6-min walk of  $\geq 140$  m; able to complete 3 min unloaded pedaling in exercise tolerance test (pre- and post-rehabilitation)
- Consent: Signed consents for screening and rehabilitation
- Smoking:
  - Plasma cotinine level  $\leq 13.7$  ng/mL (or arterial carboxyhemoglobin  $\leq 2.5\%$  if using nicotine products)
  - Nonsmoking for 4 months prior to initial interview and throughout evaluation for surgery
- Preoperative diagnostic and therapeutic program adherence: Must complete assessment for and program of preoperative services in preparation for surgery
- In addition, the patient must have:
  - Severe upper lobe predominant emphysema (as defined by radiologist assessment of upper lobe predominance on CT scan), or
  - Severe non-upper lobe emphysema with low exercise capacity.  
Patients with low exercise capacity are those whose maximal exercise capacity is at or below 25 watts for women and 40 watts (w) for men after completion of the preoperative therapeutic program in preparation for LVRS. Exercise capacity is measured by incremental, maximal, symptom-limited exercise with a cycle ergometer utilizing 5 or 10 watt/minute ramp on 30% oxygen after 3 minutes of unloaded pedaling.
- Effective for services performed on or after November 17, 2005, CMS determines that LVRS is reasonable and necessary when performed at facilities that are:
  - Certified by the Joint Commission on Accreditation of Healthcare Organizations (Joint Commission) under the LVRS Disease Specific Care Certification Program (program standards and requirements as printed in the Joint Commission's October 25, 2004, Disease Specific Care Certification Program packet); or
  - Approved as Medicare lung or heart-lung transplantation hospitals.
- In addition, LVRS performed between January 1, 2004, and May 17, 2007, is reasonable and necessary when performed at facilities that: (1) were approved by the National Heart Lung and Blood Institute to participate in the National Emphysema Treatment Trial (NETT); or (2) are approved as Medicare lung or heart-lung transplantation hospitals.

A list of approved facilities and their approval dates will be listed and maintained on the CMS Web site at [http://www.cms.gov/MedicareApprovedFacilitie/04\\_lvrs.asp#TopOfPage](http://www.cms.gov/MedicareApprovedFacilitie/04_lvrs.asp#TopOfPage).

The surgery must be preceded and followed by a program of diagnostic and therapeutic services consistent with those provided in the NETT and designed to maximize the patient's potential to successfully undergo and recover from surgery. The program must include a 6- to 10-week series of at least 16, and no more than 20, preoperative sessions, each lasting a minimum of 2 hours. It must also include at least 6, and no more than 10, postoperative sessions, each lasting a minimum of 2 hours, within 8 to 9 weeks of the LVRS. This program must be consistent with the care plan developed by the treating physician following performance of a comprehensive evaluation of the patient's medical, psychosocial and nutritional needs, be consistent with the preoperative and postoperative services provided in the NETT, and arranged, monitored, and performed under the coordination of the facility where the surgery takes place.

### ***Nationally Non-Covered Indications***

LVRS is not covered in any of the following clinical circumstances:

- Patient characteristics carry a high risk for perioperative morbidity and/or mortality;
- The disease is unsuitable for LVRS;
- Medical conditions or other circumstances make it likely that the patient will be unable to complete the preoperative and postoperative pulmonary diagnostic and therapeutic program required for surgery;
- The patient presents with  $FEV1 \leq 20\%$  of predicted value, and either homogeneous distribution of emphysema on CT scan, or carbon monoxide diffusing capacity of  $\leq 20\%$  of predicted value (high-risk group identified October 2001 by the NETT); or
- The patient satisfies the criteria outlined above in section B (1), and has severe, non-upper lobe emphysema with high exercise capacity. High exercise capacity is defined as a maximal workload at the completion of the preoperative diagnostic and therapeutic program that is above 25 w for women and 40 w for men (under the measurement conditions for cycle ergometry specified above).

All other indications for LVRS not otherwise specified remain noncovered.

## 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 guideline 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 the member specific benefit plan document 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.

CPT Code	Description
32491	Removal of lung, other than pneumonectomy; with resection-plectomy of emphysematous lung(s) (bullous or non-bullous) for lung volume reduction, sternal split or transthoracic approach, includes any pleural procedure, when performed

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HCPCS Code	Description
G0302	Preoperative pulmonary surgery services for preparation for LVRS, complete course of services, to include a minimum of 16 days of services
G0303	Preoperative pulmonary surgery services for preparation for LVRS, 10 to 15 days of services
G0304	Preoperative pulmonary surgery services for preparation for LVRS, 1 to 9 days of services
G0305	Post discharge pulmonary surgery services after LVRS, minimum of 6 days of services

Diagnosis Code	Description
J43.0	Unilateral pulmonary emphysema [MacLeod's syndrome]
J43.1	Panlobular emphysema
J43.2	Centrilobular emphysema
J43.8	Other emphysema
J43.9	Emphysema, unspecified

## References

### CMS National Coverage Determinations (NCDs)

[NCD 240.1 Lung Volume Reduction Surgery \(Reduction Pneumoplasty\)](#)

### CMS Claims Processing Manual

[Chapter 3; § 100.7 Lung Volume Reduction Surgery](#)

[Chapter 4; § 310 Lung Volume Reduction Surgery](#)

### CMS Transmittal(s)

[Transmittal 3, Change Request 2688, Dated 11/04/2003 \(Lung Volume Reduction Surgery\)](#)

[Transmittal 26, Change Request 2688, Dated 11/04/2003 \(New sections are being added to the outpatient and inpatient chapters of this manual because of new coverage of lung volume reduction surgery \(LVRS\)\)](#)

[Transmittal 44, Change Request 4149, Dated 12/02/2005 \(Lung Volume Reduction Surgery\)](#)

[Transmittal 768, Change Request 4149, Dated 12/02/2005 \(Lung Volume Reduction Surgery\)](#)

[Transmittal 3030, Change Request 8679, Dated 08/22/2014 \(Update to Pub. 100-04, Chapter 03 to Provide Language-Only Changes for Updating ICD-10 and ASC X12\)](#)

### UnitedHealthcare Commercial Policy

[Omnibus Codes](#)

Lung Volume Reduction Surgery (Reduction Pneumoplasty) (NCD 240.1)

UnitedHealthcare Medicare Advantage Policy Guideline

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## Guideline History/Revision Information

Revisions to this summary document do not in any way modify the requirement that services be provided and documented in accordance with the Medicare guidelines in effect on the date of service in question.

Date	Summary of Changes
04/01/2021	<b>Template Update</b> <ul style="list-style-type: none"><li>Reformatted policy; transferred content to new template</li></ul>
07/08/2020	<b>Supporting Information</b> <ul style="list-style-type: none"><li>Updated <i>References</i> section to reflect the most current information</li><li>Archived previous policy version MPG196.05</li></ul>

## Purpose

The Medicare Advantage Policy Guideline documents are generally used to support UnitedHealthcare Medicare Advantage claims processing activities and facilitate providers' submission of accurate claims for the specified services. The document can be used as a guide to help determine applicable:

- Medicare coding or billing requirements, and/or
- Medical necessity coverage guidelines; including documentation requirements.

UnitedHealthcare follows Medicare guidelines such as NCDs, LCDs, LCAs, and other Medicare manuals for the purposes of determining coverage. It is expected providers retain or have access to appropriate documentation when requested to support coverage. Please utilize the links in the [References](#) section below to view the Medicare source materials used to develop this resource document. This document is not a replacement for the Medicare source materials that outline Medicare coverage requirements. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

## Terms and Conditions

The Medicare Advantage Policy Guidelines are applicable to UnitedHealthcare Medicare Advantage Plans offered by UnitedHealthcare and its affiliates.

These Policy Guidelines are provided for informational purposes, and do not constitute medical advice. Treating physicians and healthcare providers are solely responsible for determining what care to provide to their patients. Members should always consult their physician before making any decisions about medical care.

Benefit coverage for health services is determined by the member specific benefit plan document\* and applicable laws that may require coverage for a specific service. The member specific benefit plan document identifies which services are covered, which are excluded, and which are subject to limitations. In the event of a conflict, the member specific benefit plan document supersedes the Medicare Advantage Policy Guidelines.

Medicare Advantage Policy Guidelines are developed as needed, are regularly reviewed and updated, and are subject to change. They represent a portion of the resources used to support UnitedHealthcare coverage decision making. UnitedHealthcare may modify these Policy Guidelines at any time by publishing a new version of the policy on this website. Medicare source materials used to develop these guidelines include, but are not limited to, CMS National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Medicare Benefit Policy Manual, Medicare Claims Processing Manual, Medicare Program Integrity Manual, Medicare Managed Care Manual, etc. The information presented in the Medicare Advantage Policy Guidelines is believed to be accurate and current as of the date of publication and is provided on an "AS IS" basis. Where there is a conflict between this document and Medicare source materials, the Medicare source materials will apply.

You are responsible for submission of accurate claims. Medicare Advantage Policy Guidelines are intended to ensure that coverage decisions are made accurately based on the code or codes that correctly describe the health care services provided. UnitedHealthcare Medicare Advantage Policy Guidelines use Current Procedural Terminology (CPT®), Centers for Medicare and Medicaid Services (CMS), or other coding guidelines. References to CPT® or other sources are for definitional purposes only and do not imply any right to reimbursement or guarantee claims payment.

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\*For more information on a specific member's benefit coverage, please call the customer service number on the back of the member ID card or refer to the [Administrative Guide](#).