Medicare C/D Medical Coverage Policy

Lung Volume Reduction Surgery

Origination: February 23, 2005
Review Date: June 15, 2016
Next Review: June, 2018

DESCRIPTION OF PROCEDURE
Lung volume reduction surgery (LVRS) or reduction pneumoplasty, also referred to as lung shaving or lung contouring, is an invasive surgical procedure to reduce the volume of a hyperinflated lung in order to allow the underlying compressed lung to expand and establish improved respiratory function.

POLICY STATEMENT
Coverage will be provided for LVRS when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.

BENEFIT APPLICATION
Please refer to the member’s individual Evidence of Coverage (EOC) for benefit determination. Coverage will be approved according to the EOC limitations, if the criteria are met.

Coverage decisions will be made in accordance with:
- The Centers for Medicare & Medicaid Services (CMS) national coverage decisions;
- General coverage guidelines included in original Medicare manuals unless superseded by operational policy letters or regulations; and
- Written coverage decisions of local Medicare carriers and intermediaries with jurisdiction for claims in the geographic area in which services are covered.

Benefit payments are subject to contractual obligations of the Plan. If there is a conflict between the general policy guidelines contained in the Medical Coverage Policy Manual and the terms of the member's particular Evidence of Coverage (EOC), the EOC always governs the determination of benefits.
CRITERIA REQUIRED FOR COVERAGE APPROVAL

1. Preauthorization by the Plan is required;

AND

2. Covered when all the following criteria are met:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>History and Physical Examination</td>
<td>Consistent with emphysema&lt;br&gt;BMIs ≤31.1 kg/m² (men) or ≤32.3 kg/m² (women)&lt;br&gt;Stable with ≤20mg prednisone daily (or equivalent)</td>
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<td>Radiographic</td>
<td>High Resolution Computer Tomography (HRCT) scan evidence of bilateral emphysema</td>
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<td>Pulmonary Function (pre-rehabilitation)</td>
<td>Forced expiratory volume in one second (FEV₁) ≤45% predicted (≥15% predicted if age ≥70 years)&lt;br&gt;Total lung capacity (TLC) ≥100% predicted post-bronchodilator&lt;br&gt;Residual volume (RV) ≥150% predicted post-bronchodilator</td>
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<td>Arterial Blood Gas (ABG) level (pre-rehabilitation)</td>
<td>PO₂ ≤60mmHg&lt;br&gt;PO₂ ≥45mmHg on room air</td>
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<td>Cardiac Assessment</td>
<td>Approval for procedure by cardiologist if any of the following are present: unstable angina; left ventricular ejection fraction (LVEF) cannot be estimated from the echocardiogram; LVEF &lt;45%; dobutamine-radionuclide cardiac scan indicates coronary artery disease or ventricular dysfunction; arrhythmia (&gt;5 premature ventricular contractions per minute, cardiac rhythm other than sinus, premature ventricular contractions on EKG at rest)</td>
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<td>Surgical Assessment</td>
<td>Approval for surgery by pulmonary physician, thoracic surgeon, and anesthesiologist post-rehabilitation</td>
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<td>Exercise</td>
<td>Post-pulmonary rehabilitation 6 min walk of ≥140m; able to complete 3 min unloaded pedaling in exercise tolerance test (pre- and post-rehabilitation)</td>
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<td>Consent</td>
<td>Signed consents for screening and rehabilitation</td>
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<tr>
<td>Smoking</td>
<td>Plasma cotinine level ≤13.7ng/mL (or arterial carboxyhemoglobin ≤2.5% if using nicotine products)&lt;br&gt;Nonsmoking for 4 months prior to initial interview and throughout the evaluation process</td>
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<td>Preoperative diagnostic and therapeutic program adherence</td>
<td>Must complete assessment for and program of preoperative services in preparation for surgery</td>
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AND

3. The member must also 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;
     (Exercise capacity is at or below 25 watts for women and 40 watts for men after completion of the preoperative therapeutic program in preparation for LVRS).

AND

4. The surgery must be preceded and followed by a program of diagnostic and therapeutic services designed to maximize the member’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. The associated codes for the diagnostic service or pulmonary therapy are G0302, G0303, G0304, and G0305.

WHEN COVERAGE WILL NOT BE APPROVED
1. Member characteristics carry a high risk for perioperative morbidity and/or mortality;
2. The disease is unsuitable for LVRS;
3. Medical conditions or other circumstances make it unlikely that the member will be able to complete the preoperative and postoperative pulmonary diagnostic and therapeutic program required for surgery;
4. The member presents with FEV1 ≤20% of the predicted value, and either homogeneous distribution of emphysema on CT scan, or carbon monoxide diffusing capacity of ≤20% of predicted value;
5. The member satisfies the criteria outlined in criteria number 2 listed above 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 25w for women and 40w for men (under the measurement of conditions for cycle ergometry specified above).
6. All other indications for LVRS not otherwise specified.

BILLING/ CODING/PHYSICIAN DOCUMENTATION INFORMATION
This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed.

Applicable Codes: 32491, G0302, G0303, G0304, G0305
The Plan may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

References:
1. Medicare National Coverage Determination (NCD) for Lung Volume Reduction Surgery (ID# 240.1); Effective date 3/2/06; Accessed 05/02/2014 via Internet site www.cms.gov/mcd/viewncd.
2.  

Policy Implementation/Update Information:
Revision Date:
November 30, 2006: No criteria changes made.
June 17, 2009: New online policy format; no criteria changes made.
March 2010: No CMS criteria changes, minor edits to be consistent with CMS criteria.
August 2012: No CMS criteria changes, codes added to policy.
June 18, 2014: CMS has not updated the facility list since May, 2012; Deleted facility requirement but must meet all other criteria; Deleted references to the National Emphysema Treatment Trial (NETT) as this trial has ended.
Revision Date: Annual Review No CMS updates. No changes to policy.

Approval Dates:
Medical Coverage Policy Committee: June 15, 2016

Policy Owner: Carolyn Wisecarver, RN, BSN
Medical Policy Coordinator