# Evolent Clinical Guideline 7332 for Thoracentesis and Pleurodesis

| Guideline Number: Evolent_CG_7332 | Applicable Codes | |
|---|---|---|
| *"Evolent" refers to Evolent Health LLC and Evolent Specialty Services, Inc.* <br>  | | |
| **Original Date:** <br> **September 2019** | **Last Revised Date:** <br> **May 2025** | **Implementation Date:** <br> **January 2026** |

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# STATEMENT

## General Information

- ***It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.***
- ***Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.***
- ***The guideline criteria in the following sections were developed utilizing evidence-based and peer-reviewed resources from medical publications and societal organization guidelines as well as from widely accepted standard of care, best practice recommendations.***

## Purpose

**Indications for determining medical necessity for Thoracentesis.**

## Clinical Reasoning

**All criteria are substantiated by the latest evidence-based medical literature. To enhance transparency and reference, Appropriate Use (AUC) scores, when available, are diligently listed alongside the criteria.**

**This guideline first defaults to AUC scores established by published, evidence-based guidance endorsed by professional medical organizations. In the absence of those scores, we adhere to a standardized practice of assigning an AUC score of 6. This score is determined by considering variables that ensure the delivery of patient-centered care in line with current guidelines, with a focus on achieving benefits that outweigh associated risks. This approach aims to maintain a robust foundation for decision-making and underscores our commitment to upholding the highest standards of care. [1–5]**

# INDICATIONS

## Thoracentesis

- **Evaluation of undiagnosed pleural effusion [6]**
- **Therapeutic drainage of symptomatic pleural effusion [6–8]**
- **Therapeutic drainage of infected fluid [6]**

## Pleurodesis

- Pleural Effusion
  - symptomatic malignant pleural effusion and known (or suspected) expandible lung, as an alternative to repeat thoracentesis [7]
- Pneumothorax
  - primary (see Definitions section) spontaneous pneumothorax with one or more of the following characteristics [6,7,9]:
    - recurrent effusion
    - persistent air leak (>3-5 days)
    - bilateral pneumothorax
    - hemopneumothorax
    - tension pneumothorax
    - professions/hobbies at risk for recurrence (e.g., flying, diving)
  - secondary (see Definitions section) spontaneous pneumothorax [7]

# CODING AND STANDARDS

## Codes

32550, 32552, 32554, 32555, 32556, 32557, 32560

## Applicable Lines of Business

| | |
|---|---|
| ☒ | CHIP (Children's Health Insurance Program) |
| ☒ | Commercial |
| ☒ | Exchange/Marketplace |
| ☒ | Medicaid |
| ☒ | Medicare Advantage |

# BACKGROUND

## Limitations

There are currently no established guidelines and limited data on the best treatment for refractory non-malignant pleural effusions. Invasive treatments such as pleurodesis and

indwelling pleural catheters are options once standard medical therapy for the underlying condition(s) has been maximized. [7]

## Definitions

Thoracentesis: a procedure that is done to remove a sample of fluid from around the lung.

Pleurodesis: a procedure that induces pleural inflammation resulting in adhesions between the parietal and visceral pleura, and prevention of fluid re-accumulation. Pleurodesis can be accomplished by medical (instillation of a chemical or material in the pleural space) or surgical (mechanical abrasion of the pleura) techniques.

Primary pneumothorax: pneumothorax occurring in the absence of underlying lung disease.

Secondary pneumothorax: pneumothorax occurring as a consequence of underlying lung disease.

## AUC Score

A reasonable diagnostic or therapeutic procedure can be defined as that for which the expected clinical benefits outweigh the associated risks, enhancing patient care and health outcomes in a cost-effective manner.[2]

- Appropriate Care- Median Score 7-9
- May be Appropriate Care- Median Score 4-6
- Rarely Appropriate Care- Median Score 1-3

# SUMMARY OF EVIDENCE

British Thoracic Society Guideline for pleural disease [6]

Study Design: The study involved the development of guidelines for pleural disease by the British Thoracic Society (BTS). The guidelines were created by the BTS Pleural Disease Guideline Development Group and the BTS Clinical Statement on Pleural Procedures Group. The process included a comprehensive review of published evidence, diagnostic and therapeutic procedures, and assessment of the risk-benefit ratio. The guidelines were developed by a task force of selected experts in the field, representing various BTS sub-specialty groups.

Target Population: The guidelines focus on patients with pleural disease, including those with spontaneous pneumothorax, undiagnosed unilateral pleural effusion, pleural infection, and pleural malignancy. The target population encompasses a wide range of pleural conditions and patient demographics.

Key Factors:

Recommendations: The guidelines provide evidence-based recommendations for the diagnosis, management, and treatment of pleural disease, including pleural aspiration,

chest drain insertion, indwelling pleural catheter (IPC) insertion, image-guided pleural biopsy, and medical thoracoscopy.

Diagnostic Testing: The guidelines emphasize the importance of accurate diagnosis, risk assessment, and selection of the most suitable type of intervention. Diagnostic testing includes thoracic ultrasound (TUS), computed tomography (CT), positron emission tomography-computed tomography (PET-CT), and magnetic resonance imaging (MRI).

Medical Therapy: The guidelines recommend medical therapy for pleural infection, pleural malignancy, and other related conditions. Specific therapies include antibiotics, analgesics, and pleurodesis agents.

Surgical and Interventional Procedures: The guidelines provide detailed recommendations for surgical and interventional procedures for various pleural conditions, including pneumothorax, pleural effusion, pleural infection, and pleural malignancy.

Follow-up Care: The guidelines emphasize the importance of follow-up care for pleural disease patients, including regular imaging, monitoring for complications, and patient education.

Exploring the efficacy and advancements of medical pleurodesis: a comprehensive review of current research [7]

Study Design: This narrative review aims to provide an overview of medical pleurodesis techniques, their indications, and potential adverse effects. The review was performed by checking scientific databases for medical literature, focusing especially on data derived from randomized controlled trials (RCTs).

Target Population: The review focuses on patients with malignant pleural effusions (MPEs), recurrent or refractory nonmalignant pleural effusions (NMPEs), and recurrent pneumothorax. These conditions significantly affect patient morbidity and quality of life.

Key Factors:

Medical Pleurodesis Techniques: Various nonsurgical techniques exist to perform pleurodesis, including talc pleurodesis, indwelling pleural catheter (IPC) placement, and autologous blood patch pleurodesis. Talc pleurodesis is highlighted as the safest and most effective method.

Efficacy and Safety: Talc pleurodesis demonstrates an overall success rate ranging from 80% to 95%, depending on the dose, the number of administrations, the pathological entity being treated, and the patient's condition. IPCs are considered suitable for patients with a history of pleurodesis failure and those with limited life expectancy.

Combination of Techniques: The combination of IPCs with talc pleurodesis enhances success rates in MPE management. Single-day procedures involving thoracoscopic talc poudrage and IPC insertion offer potential for effective pleurodesis.

Complications: Although medical pleurodesis is generally considered safe, it can be associated with certain complications, such as pain, fever, empyema, and infections. The use of IPCs is associated with complications in approximately 10-20% of cases.

SPLF/SMFU/SRLF/SFAR/SFCTCV Guidelines for the management of patients with primary spontaneous pneumothorax [9]

**Study Design: These guidelines were developed by the French Speaking Society of Respiratory Diseases (SPLF), the French Society of Emergency Medicine (SFMU), the French Intensive Care Society (SRLF), the French Society of Anesthesia & Intensive Care Medicine (SFAR), and the French Society of Thoracic and Cardiovascular Surgery (SFCTCV). The guidelines are based on literature review and analysis according to the GRADE (Grading of Recommendation Assessment, Development, and Evaluation) methodology.**

**Target Population: The guidelines focus on the management of patients with primary spontaneous pneumothorax (PSP). The target population includes adult patients (>15 years old) with PSP.**

**Key Factors:**

**Diagnostic Methods: The guidelines emphasize the importance of diagnostic imaging, including chest X-ray (CXR), chest CT scan, and chest ultrasound, for assessing the size of the pneumothorax and ruling out differential diagnoses.**

**Therapeutic Management: The therapeutic strategy depends on the clinical presentation, including emergency needle aspiration for tension PSP, conservative management for small PSP, and chest tube drainage for large PSP. Outpatient management is recommended for stable patients with large PSP without signs of immediate severity.**

**Surgical Management: Surgery is proposed for patients with recurrent PSP, persistent air leaks, or PSP occurring during pregnancy. Minimally invasive techniques are preferred for inducing pleurodesis.**

**Analgesia: The guidelines recommend multimodal analgesia, including local anesthesia, to reduce pain associated with chest tube removal and other procedures.**

# ANALYSIS OF EVIDENCE

**Shared Findings [6,7,9]**

**All three articles emphasize the importance of thoracentesis and pleurodesis in managing pleural effusions and pneumothorax. They agree on several key points:**

1. **Thoracentesis for Diagnostic and Therapeutic Purposes:**
    - **Thoracentesis is a crucial procedure for both diagnosing and managing pleural effusions. It helps in obtaining pleural fluid samples for analysis and can provide symptomatic relief by removing excess fluid.**
2. **Pleurodesis for Preventing Recurrence:**
    - **Pleurodesis is recommended to prevent the recurrence of pleural effusions and pneumothorax. Talc pleurodesis is highlighted as the most effective and commonly used method.**
3. **Use of Talc in Pleurodesis:**
    - **Talc is considered the safest and most effective agent for pleurodesis. It can be administered as talc slurry or talc poudrage, with both methods showing comparable success rates.**

**Conclusions** [6,7,9]

**In summary, all three articles highlight the critical role of thoracentesis and pleurodesis in managing pleural effusions and pneumothorax. They share conclusions on the importance of these procedures for diagnostic and therapeutic purposes, the use of talc in pleurodesis, and the prevention of recurrence.**

# POLICY HISTORY

| Date | Summary |
|---|---|
| May 2025 | • Updated citations<br>• Added third bullet to General Information<br>• Added Summary of Evidence and Analysis of Evidence |
| December 2024 | • This guideline replaces UM 1370 Thoracentesis and Pleurodesis<br>• Indications for pleurodesis were broken down by method.<br>• Indications for thoracentesis were broken down by diagnosis |

# LEGAL AND COMPLIANCE

## Guideline Approval

### *Committee*

**Reviewed / Approved by Evolent Specialty Services Clinical Guideline Review Committee**

## Disclaimer

***Evolent Clinical Guidelines do not constitute medical advice. Treating health care professionals are solely responsible for diagnosis, treatment, and medical advice. Evolent uses Clinical Guidelines in accordance with its contractual obligations to provide utilization management. Coverage for services varies for individual members according to the terms of their health care coverage or government program. Individual members' health care coverage may not utilize some Evolent Clinical Guidelines. Evolent clinical guidelines contain guidance that requires prior authorization and service limitations. A list of procedure codes, services or drugs may not be all inclusive and does not imply that a service or drug is a covered or non-covered service or drug. Evolent reserves the right to review and update this Clinical Guideline in its sole discretion. Notice of any changes shall be provided as required by applicable provider agreements and laws or regulations.***

***Members should contact their Plan customer service representative for specific coverage information.***

***Evolent Clinical Guidelines are comprehensive and inclusive of various procedural applications for each service type. Our guidelines may be used to supplement Medicare criteria when such criteria is not fully established. When Medicare criteria is determined to not be fully established, we only reference the relevant portion of the corresponding Evolent Clinical Guideline that is applicable to the specific service or item requested in order to determine medical necessity.***

# REFERENCES


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