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# Spirometry

## Adjudication Guideline

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## Abstract

### For Members

Spirometry is a simple test used to help diagnose and monitor certain lung conditions by measuring how much air can be breath out in one forced breath. It's carried out using a device called a spirometer, which is a small machine attached by a cable to a mouthpiece.

Conditions that can be picked up and monitored using spirometry include:

- asthma – a long-term condition in which the airways become periodically inflamed (swollen) and narrowed
- chronic obstructive pulmonary disease (COPD) – a group of lung conditions where the airways become narrowed
- cystic fibrosis – a genetic condition in which the lungs and digestive system become clogged with thick, sticky mucus
- pulmonary fibrosis – scarring of the lungs.

### For Medical Professionals

Spirometry measures the rate at which the lung changes volume during forced breathing maneuvers. Spirometry begins with a full inhalation, followed by a forced expiration that rapidly empties the lungs. Expiration is continued for as long as possible or until a plateau in exhaled volume is reached. These efforts are recorded and graphed. Spirometry is a powerful tool that can be used to detect, follow, and manage patients with lung disorders. There can be:

1. Restrictive <sup>1</sup>: such as Pulmonary fibrosis, Neuromuscular disorders, pulmonary oedema
2. Obstructive <sup>1</sup>: such as Chronic obstructive pulmonary disease (COPD), Asthma, Bronchiectasis/cystic fibrosis, Bronchiolitis,  $\alpha$ 1 – antitrypsin deficiency

**Approved by:**  
Daman

**Responsible:**  
Medical Standards & Research

**Related Adjudication Guidelines:** NA

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## Scope

The scope of this adjudication rule is to highlight the medical necessity and coverage of spirometry for all health insurance plans administered by DAMAN subject to policy terms and conditions.

## Adjudication Policy

### Eligibility / Coverage Criteria

#### Indications for spirometry <sup>1</sup>

- A. The evaluation of symptoms, signs or abnormal investigations:
  1. Symptoms:
    - chronic cough lasting 8 weeks or longer <sup>2</sup>
    - chronic dyspnoea lasting more than one month <sup>3</sup>
    - wheeze in asthmatic patients, orthopnoea, sputum production
  2. Signs:
    - chest deformity (barrel chest)
    - cyanosis
    - prolonged expiration
    - wheeze/stridor
  3. unexplained crackles
- B. Investigations <sup>4</sup>: To evaluate abnormal lab tests such as:
  1. Pulse oxygen saturation — Assessment of oxygen saturation can be used to identify a gas transfer defect and to titrate the amount of oxygen needed to maintain adequate oxygenation.
  2. Arterial blood gases — ABGs are a helpful adjunct to pulmonary function testing in selected patients. The primary role of measuring ABGs in stable outpatients is to confirm hypercapnia when it is suspected based on clinical history (e.g., respiratory muscle weakness, advanced COPD), an elevated serum bicarbonate level, and/or chronic hypoxemia
- C. To follow the course of disease and assess prognosis (Obstructive/restrictive/Asthma), *Please refer to table 2.*
- D. To monitor therapy <sup>4</sup>:
  1. when performed before and after bronchodilator, it is useful to assess for asthma or other causes of airflow obstruction in the evaluation of chronic cough. It is also used to monitor a broad spectrum of respiratory diseases, including asthma, COPD, interstitial lung disease, and neuromuscular diseases affecting respiratory muscles.
  2. It be used to monitor response to biologic drugs
- E. To assess preoperative risk in patients <sup>4</sup>:  
 Spirometry is useful for determining the risk of postoperative pulmonary complications in certain high-risk situations, including patients known to have COPD or asthma, current smokers, and those scheduled for thoracic or upper abdominal surgery. If spirometry demonstrates moderate to severe obstruction and the surgery can be delayed, a prophylactic program of pulmonary hygiene, including smoking cessation, inhaled bronchodilators or glucocorticoids, and possibly antibiotics for bronchitis, will

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reduce the risk. However, the results of spirometry alone should not be used to deny surgery. Combining the results of spirometry with radioisotope or CT lung scans is also useful for predicting the remaining lung function following a lobectomy or pneumonectomy

F. Screening for employment status at risk of having pulmonary disease.

**Table 2. Suggested pattern based on FEV1 & FVC <sup>5</sup>:**

Suggested Pattern	FEV1/FVC	FVC
Normal	Normal	Normal
Restrictive	Normal	Decreased
Obstructive	Decreased	Normal
Mixed (obstructive/Restrictive)	Decreased	Decreased

### Contraindications <sup>6</sup>

If any of the following have occurred recently, then it may be better to wait until the patient has fully recovered before carrying out spirometry.

- Haemoptysis of unknown origin
- Pneumothorax
- Unstable cardiovascular status, recent myocardial infarction or pulmonary embolism
- Thoracic, abdominal or cerebral aneurysms
- Recent eye surgery
- Acute disorders affecting test performance, such as nausea or vomiting
- Recent thoracic or abdominal surgical procedures

### Eligible clinician specialty

Eligible Clinician Speciality
General Practitioner
Medical Practitioner
Critical Care Medicine
Neurology
General Paediatric
Emergency Medicine
Pediatric Cardiology
Family Medicine

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Cardiovascular Disease  
 Internal Medicine  
 Paediatrics/ Pulmonology  
 Internal Medicine/ Pulmonary Disease  
 Paediatric Intensive Care  
 Physical Medicine and Rehabilitation  
 Cardiology  
 Paediatric Neurology  
 Respiratory Medicine  
 Critical Care Medicine  
 Critical Care Med / Infectious Diseases  
 Rheumatology  
 Medical Oncology  
 Allergy and Immunology.  
 Internal Medicine/ Medical Oncology  
 Internal Medicine/ Rheumatology  
 Internal Medicine/ Cardiovascular Disease  
 Paediatric Immunology and Allergy  
 Infectious Diseases  
 Paediatric Emergency Medicine  
 Emergency Medicine/ Critical Care  
 Adolescent Medicine  
 Pulmonary Disease  
 Paediatric Rheumatology  
 Cardiology/Interventional cardiology  
 Paediatric Oncology  
 Paediatric Infectious Disease  
 Occupational Medicine  
 Emergency Medical Services  
 Paediatric Pulmonology  
 Internal Medicine/ Critical Care Medicine  
 Pulmonary Disease/ Critical Care Medicine  
 Internal Medicine/ Neurology

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Internal Medicine/ Infectious Diseases
Clinical Immunology & Allergy
Rheumatology/Immunology and Allergy
Respiratory Medicine/ Critical Care Medicine
Internal Medicine / Pulmonary Disease / Critical Care Medicine
Paediatrics/ Cardiology
Emergency Medicine / Undersea and Hyperbaric Medicine
Paediatrics/ Critical Care Medicine
Int Med/Pulmonary and Sleep Medicine
Paediatric Rehabilitation Medicine
Paediatrics/ Infectious Diseases
Allergy
Family Medicine / Adolescent Medicine
Cardiac Surgery

### Requirements for Coverage

Failure to submit, upon request or when requesting a clinical history, indication the need for testing will result in rejection of claim.

### Non-Coverage

Not covered for visitor plans

### Payment and Coding Rules

Please apply regulator payment rules and regulations and relevant coding manuals for ICD, CPT, etc.

**Denial codes:** Regulator denial codes with description are elaborated for reference.

*These are specialized codes directed by regulator, that explains the reason of rejection of the service by DAMAN to the providers.*

Code	Code description
MNEC-003	Service is not clinically indicated based on good clinical practice
MNEC-004	Service is not clinically indicated based on good clinical practice, without additional supporting diagnoses/activities
CODE-010	Activity/diagnosis inconsistent with clinician specialty

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## Appendices

### Additional Information

**JAWADA clinical quality KPI:** not applicable

#### A. References

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#### B. Revision History

Date	Change(s)
09/02/2021	Release of V1.0

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