



## Guidance document for PM JAY package

### Mitral Valve

**Procedures covered/ Procedure Count: 2**

**Specialty: CTVS**

Package name	Procedure name	HBP 1.0 code	HBP 2.0 code	Package price	ALOS
Single Valve Procedure	Mitral Valve	S1300011, S1300015, S1300016	SV005B	119,000 + Cost of implant	7 days
Immediate reoperation	Mitral Valve	New Package	SV0031C	59,500 + Cost of implant	7 days

**Minimum qualification of the treating doctor:**

**Essential:** M.Ch./DNB/equivalent (Cardiothoracic Surgery)

**Special empanelment criteria/linkage to empanelment module:** Cardiothoracic Surgery OT

#### Disclaimer:

For monitoring and administering the claim management process of **Mitral Valve**, NHA shall be following these guidelines. This document has been prepared for guidance of PROCESSING TEAM and TRANSACTION MANAGEMENT SYSTEM of AB PM-JAY for the claims of procedures mentioned above. The hospitals can also refer to this document so that they have the insight on how the claims will be processed. However, this document doesn't provide any guidance on clinical and therapeutic management of patient. In that respect the hospitals and physicians may refer to any other relevant material as per the extant professional norms.

### **PART I: GUIDELINES FOR CLINICIANS AND HEALTHCARE PROVIDERS**

#### **1.1 Objective:**

The purpose of this section is to act as a guidance & a clinical decision support tool for the clinicians in deciding the line of treatment, plan clinical management of patient and decide referral of cases to the appropriate level of care (as required) for treatment of patients under PMJAY and selection of corresponding Health Benefit Package.

It will also serve as a tool for hospitals to determine and submit the mandatory documents required for claiming reimbursement of health benefit package under PMJAY.

#### **1.2 Clinical key pointers:**

Mitral stenosis is characterized by narrowing of the mitral valve orifice. The most common cause of mitral stenosis is rheumatic fever. Uncommon causes of mitral stenosis are calcification of the mitral valve leaflets and congenital heart disease. Other causes of mitral

stenosis include infective endocarditis, mitral annular calcification, endomyocardial fibroelastosis, malignant carcinoid syndrome, systemic lupus erythematosus, Whipple disease, Fabry disease, and rheumatoid arthritis.

### **Clinical Features**

Mitral stenosis presents 5 to 15 years after an episode of rheumatic fever. The most common symptoms are orthopnea and paroxysmal nocturnal dyspnea. Patients may have symptoms of palpitations, chest pain, hemoptysis, thromboembolism when the left atrial volume is increased, ascites, edema, and hepatomegaly (if right-side heart failure develops). There is also an increase in symptoms of fatigue and weakness with exercise and pregnancy.

On auscultation, the first heart sound is usually loud and maybe palpable due to increased force in the closing of the mitral valve. The P2 (pulmonic) component of the second heart sound (S2) will be loud if severe pulmonary hypertension is due to mitral stenosis. An opening snap (OS) is an additional sound that may be heard after the A2 component of the second heart sound (S2). This is the forceful opening of the mitral valve when the pressure in the left atrium is greater than the pressure in the left ventricle. A mid-diastolic rumbling murmur with presystolic accentuation is heard after the opening snap. This murmur is a low pitch sound. It is best heard with the bell of the stethoscope at the apex.

### **Diagnosis**

Mitral stenosis is evaluated using noninvasive and invasive measures. Noninvasive tests are the electrocardiogram (ECG), chest x-ray, echocardiogram, and/or exercise echocardiogram. An invasive test for mitral stenosis would include a cardiac catheterization.

### **Treatment**

Percutaneous mitral balloon valvuloplasty (PMBV) is an invasive procedure used to manage mitral stenosis. PMBV improves symptoms by increasing the mitral valve area and reduce mitral valve gradient. PMBV is indicated in symptomatic patients (New York Heart Association functional class greater than II), or asymptomatic patients with pulmonary hypertension with moderate or severe stenosis, and favorable valve morphology in the absence of left atrial thrombus, or moderate to severe mitral regurgitation.

Mitral valve replacement surgery is indicated in patients with symptomatic moderate or severe mitral stenosis when percutaneous mitral balloon valvuloplasty is contraindicated or unfavorable valve morphology.

Mitral regurgitation can be subdivided into primary and secondary causes.

#### **Primary Mitral Regurgitation**

- Also called degenerative or organic
- Any MR resulting from structural deformity of or damage to the leaflets, chordae, and/or papillary muscles causing leaflets to close insufficiently during systole

- Common causes: cusp retraction, papillary muscle rupture, mitral valve prolapse (MVP), or leaflet perforation

### **Secondary Mitral Regurgitation**

- Also called functional or ischemic
- Due to a left ventricular wall motion abnormalities (i.e., ischemic cardiomyopathy) or left ventricular remodeling (i.e., dilated cardiomyopathy)
- No structural problems with the valve itself
- Leads to mitral annular dilatation or displacement of papillary muscles causing retrograde flow from improperly closed mitral valve leaflets

### **Clinical Features**

#### **Acute Mitral Regurgitation**

The clinical assessment will elicit findings associated with a precipitous decline in cardiac output and possibly cardiogenic shock. The patient will usually complain of significant dyspnea at rest, exacerbated in the supine position, as well as cough with clear or pink, frothy sputum. They may also endorse symptoms associated with myocardial ischemia, such as chest pain radiating to the neck, jaw, shoulders, or upper extremities, nausea, and diaphoresis. Physical examination may reveal altered mental status, tachycardia (or bradycardia if there is ischemic involvement of the conduction system), hypotension, tachypnea, hypoxemia, and cyanosis.

#### **Chronic Mitral Regurgitation**

Patients often remain asymptomatic until late in the course. Clinical findings common to all etiologies include fatigue, dyspnea on exertion, orthopnea, paroxysmal nocturnal dyspnea, weight gain, widening of pulse pressure, apical holosystolic murmur with radiation to the axilla, dependent edema, displaced apical impulse, and jugular venous distension. In more advanced cases, there may also be syncope or near syncope, cyanosis, clubbing of digits, gross anasarca, hepatomegaly, evidence of ascites with a fluid wave, or shifting dullness, and evidence of pleural or pericardial effusions.

### **Treatment**

The decision to operate is dependent on the underlying cause of MR. Patients with valvular damage require MR surgery. Patients with functional causes of MR, such as ischemia, generally require coronary artery bypass grafting (CABG). Patients with acute, symptomatic MR, or an effective regurgitant orifice of at least 40 mm<sup>2</sup>, require surgical intervention. MR surgery is also indicated in patients who have deterioration of LV function or an end-systolic diameter of 4.5 cm. Patients diagnosed with primary severe MR require surgery when they are symptomatic with an ejection fraction over 30% or asymptomatic with an EF of 30% to 60%.

Mitral valve repair has two aims: have an acceptable surface area of mitral valve leaflet coaptation, 5 to 8 mm being essential and correct annular dilatation. The American College of Cardiology (ACC) and American Heart Association (AHA) generally recommend mitral valve repair over replacement due to decreased recurrence of MR after repair.

### 1.3 Mandatory documents- For healthcare providers

Following documents should be uploaded by the concerned hospital staff at the time of pre-authorization and claims submission

Mandatory document	Mitral valve	Immediate Reoperation- Mitral Valve
<b>i. At the time of Pre-authorization</b>		
a. Clinical notes	Yes	Yes
b. Clinical notes indicating need for reoperation	No	Yes
c. Echo/Doppler report	Yes	Yes
<b>ii. At the time of claim submission</b>		
a. Procedure / Operative notes	Yes	Yes
b. Post procedure stills of ECHO with report	Yes	Yes
c. Detailed Discharge Summary	Yes	Yes
d. Barcode of implant, if used	Yes	Yes

## **PART II: GUIDELINES FOR PROCESSING TEAM**

### **PART III: GUIDELINES FOR TRANSACTION MANAGEMENT SYSTEM (TMS)**

**3.1 Objective:** To enable setting up of cross check mechanisms/rule engines within the IT platform (TMS) to ensure compliance with STGs and to prevent fraud / abuse of the Health Benefit Package.

**3.2 Below mentioned are the scenarios where a provision would be built in TMS for pop-ups:**

1. Was the Echo/ Doppler report suggestive of Mitral Stenosis/ Mitral Regurgitation? Yes

Till the time the functionality is being developed, the processing doctors shall check the above manually.

## **References**



1. Shah SN, Sharma S. Mitral Stenosis. [Updated 2020 Jul 2]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-.
2. Douedi S, Douedi H. Mitral Regurgitation. [Updated 2020 Jan 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-.
3. Dal-Bianco JP, Beaudoin J, Handschumacher MD, Levine RA. Basic mechanisms of mitral regurgitation. Can J Cardiol. 2014 Sep;30(9):971-81
4. Stout KK, Verrier ED. Acute valvular regurgitation. Circulation. 2009 Jun 30;119(25):3232-41.