



## Guidance documentfor PM JAY package

### Unifocalization of Major Aortopulmonary Collateral Arteries (MAPCA)

Procedures covered/ Procedure Count: 1

Specialty: CTVS

Package name	Procedure name	HBP 1.0 code	HBP 2.0 code	Package price (INR)	ALOS
Surgical Correction of Category - I Congenital Heart Disease	Unifocalization of MAPCA	New package	SV001A	100,000	10 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 **Unifocalization of MAPCA**, 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:**

Treatment of pulmonary atresia with ventricular septal defect and major aortopulmonary collateral arteries is challenging and controversial. Basically, the collateral arteries are treated surgically by unifocalization to integrate them and unify the blood flow in the pulmonary circulation. These major collateral arteries are anatomically similar to the bronchial arteries; however, they develop into different vessels because of different

environmental exposures. Currently, treatment plans involving surgical intervention in early infancy to address the multiple variations of major aortopulmonary collateral arteries are being established to achieve definitive intracardiac repair. Historically, several surgical approaches have been proposed, including multi-stage unifocalization performed by lateral thoracotomy, rehabilitation of the central pulmonary artery followed by intracardiac repair, and single-stage unifocalization by a midline incision. Recently, single-stage unifocalization performed during infancy has become the preferred method for achieving low right ventricular pressure after closing the ventricular septal defect. Furthermore, for the maintenance of the lowest possible right ventricular pressure after definitive repair, combination therapy or hybrid therapy with catheter and surgical intervention is essential.

### Indications

Indications for the surgery are Ventricular septal defect with tricuspid atresia- Type C and D.

- Type C – Long-segment pulmonary atresia with absent main pulmonary artery. Branch pulmonary arteries confluent, but pulmonary blood flow dependent predominantly on MAPCAs
- Type D – Long-segment pulmonary atresia with absent main pulmonary artery. Nonconfluent branch pulmonary arteries with MAPCA-dependent pulmonary blood flow.

### Diagnostic Workup

- i. Clinical assessment
- ii. Pulse Oximetry: Measuring oxygen saturation by pulse oximeter is recommended. Anemia may undermine the severity of clinical cyanosis
- iii. X-ray Chest: The absence of cardiomegaly and pulmonary oligemia as seen in classical TOF. In patients with predominant MAPCA-dependent pulmonary blood flow, pulmonary vascular markings usually have a heterogeneous reticular appearance. The right-sided aortic arch is more common in patients with VSD-PAt (26%–50%) than in those with TOF (20%–30%).
- iv. ECG: Right-axis deviation with right ventricular hypertrophy. Patients with increased pulmonary blood flow may have biventricular hypertrophy and left atrial enlargement
- v. Echocardiography: It is a vital tool for the diagnosis; however, it may not delineate the distal pulmonary arterial tree or the sources of pulmonary arterial supply. Hence, additional imaging in the form of cardiac catheterization, CTA/cMRI, or a combination of these is essential for planning definitive repair.
- vi. Cardiac catheterization: Cardiac catheterization is almost always performed in patients with VSD-PAt before planning definitive repair, especially in patients who have had a prior aortopulmonary shunt surgery. It is a Class I indication for Type C and D and Class IIa indication for Type A and B. It helps to assess patency of shunt, confluence of pulmonary artery branches, pulmonary artery pressure, anatomical distribution and size of MAPCAs, proportion of recruitable lung segments, and single or dual supply of lung segments. It is also useful for

assessing operability in patients with large MAPCAs presenting late and suspected of having developed pulmonary vascular disease.

CTA is a vital investigation for planning surgery. Either CTA or cMRI is recommended for all patients planned for a repair (Class I). The number of segments of the lung which are supplied by native pulmonary arteries is very well defined by CTA.

### 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	Unifocalization of MAPCA
<b>i. At the time of Pre-authorization</b>	
a. Clinical notes	Yes
b. Echo/Doppler report	Yes
c. CT Angio/ Cardiac Catheterization report	Yes
<b>ii. At the time of claim submission</b>	
a. Procedure / Operative notes	Yes
b. Post procedure stills of ECHO with report	Yes
c. Detailed Discharge Summary	Yes

## PART II: GUIDELINES FOR PROCESSING TEAM

**2.1 Objective:** To provide guidance to the pre-authorization and claims processing team in ascertaining the medical necessity of procedure carried out vis a vis the patient's medical condition as evidenced by supporting documents/investigation reports etc, in deciding the admissibility and quantum of claim and compliance with mandatory documents by the hospital.

**2.2 Following mandatory documents to be diligently reviewed by the pre-auth / claims processing personnel:**

Mandatory document	Unifocalization of MAPCA
<b>i. Pre-auth processing Doctor (PPD)</b>	
a. Clinical notes - detailed history, signs & symptoms, indication for procedure	Yes
b. Was the Echo/ Doppler report suggestive of Major aorto-pulmonary collateral arteries?	Yes
c. Was the CT Angio/ Cardiac Catheterization report (if available) suggestive of Major aorto-pulmonary collateral arteries?	Yes

ii. Claims processing Doctor (CPD)	
a. Are the detailed Procedure / Operative notes submitted?	Yes
b. Does the Post procedure ECHO show repair of the defect?	Yes
c. Is Detailed Discharge Summary with follow-up advice available?	Yes

### 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 patient Echo/Doppler report showing Major aorto-pulmonary collateral arteries? Yes

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

#### References

1. Saxena A, Relan J, Agarwal R, et al, Indian guidelines for indications and timing of intervention for common congenital heart diseases: Revised and updated consensus statement of the Working group on management of congenital heart diseases. Ann Pediatr Card [serial online] 2019 [cited 2020 Jun 22];12:254-86.
2. Ikai A. Surgical strategies for pulmonary atresia with ventricular septal defect associated with major aortopulmonary collateral arteries. Gen Thorac Cardiovasc Surg. 2018;66(7):390-397.