



## Guidance document for PM JAY package

### Permanent Pacemaker Implantation

**Procedures covered/ procedure count: 2**

**Specialty: Cardiology**

Package name	Procedure name	HBP code 1.0	HBP code 2.0	Package price	ALOS
Single Chamber Permanent Pacemaker Implantation	Permanent Pacemaker Implantation - Single Chamber	S1200023	MC015A	24,500+ Cost of implant	2 Days
Double Chamber Permanent Pacemaker Implantation	Permanent Pacemaker Implantation -Double Chamber	S1200022	MC016A	33,000 + Cost of implant	2 Days

**Minimum qualification of the treating doctor:**

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

**Special empanelment criteria/linkage to empanelment module:** Functional Cardiac Cath lab/CTVS O.T.

**Disclaimer:**

ICMR has issued clinical guidelines for Bradyarrhythmias in Symptomatic patients to be followed in country. For monitoring and administering the claim management process of **Single Chamber Permanent Pacemaker Implantation and Double Chamber Permanent Pacemaker Implantation**, 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.

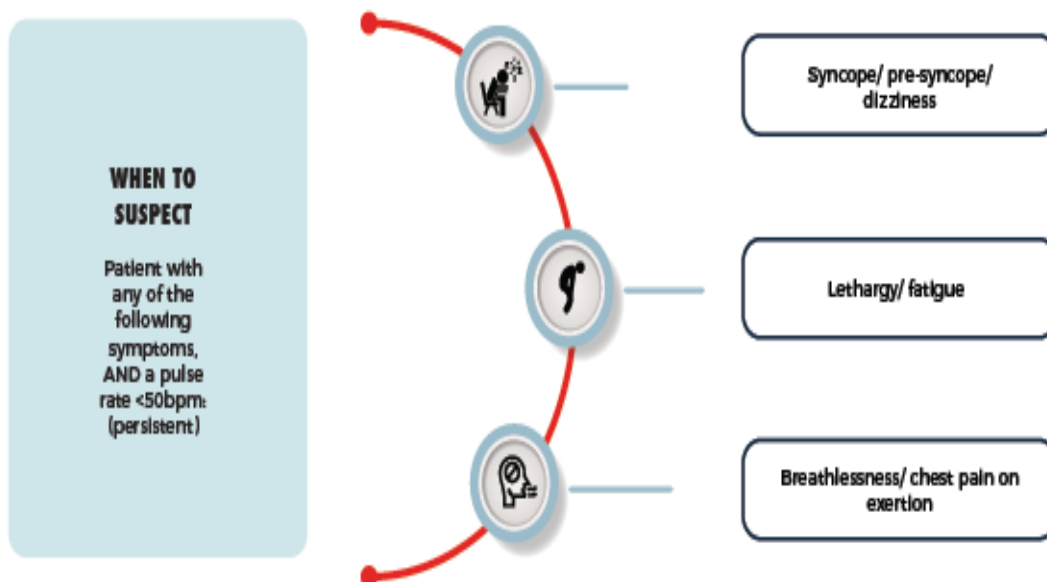
It will also serve as a tool for hospitals to determine and submit the mandatory documents required for claiming reimbursement of health benefit package under PMJAY.

## 1.2 Clinical key pointers:



Permanent pacemaker implantation is done to treat symptomatic or potentially life-threatening bradycardia of various etiologies. The most common indications for permanent pacemaker implantation are sinus node dysfunction (SND) and atrioventricular (AV) block.

- In a suspected sinus node dysfunction, a symptomatic patient with sinus bradycardia with symptomatic correlation or an asymptomatic patient with prolonged sinus pauses of more than 6 sec are recommended to receive permanent pacemaker.
- In suspected AV node disease, asymptomatic or symptomatic patients with complete heart block, advanced AV block, or Mobitz Type II block or symptomatic patients with AV block other than those mentioned previously or patients with alternating bundle branch block or symptomatic patient with 1:1 AV conduction with significant (>100 msec) HV prolongation, are recommended to receive permanent pacemaker implantation.
- Permanent pacemaker is indicated after acute phase of MI, when there is persistent AB block or evidence of disease of His-Purkinje system. It is also required in some patients of neuro-cardiogenic syncope or after repair of congenital heart disease.

## Standard Treatment Workflow (STW) for the Management of **BRADYARRHYTHMIAS IN SYMPTOMATIC PATIENTS** ICD-10-R00.1



BASIC EVALUATION		
HISTORY	EXAMINATION	TESTS TO BE DONE
<ul style="list-style-type: none"> <li>• Syncope/ pre-syncope: frequency, associated fall/ Injury/ Incontinence</li> <li>• Exertional angina or known coronary artery disease</li> <li>• Known hypothyroidism or kidney disease</li> <li>• On beta-blockers, Calcium Channel Blockers or digoxin</li> <li>• Patient with an implanted pacemaker or other device</li> <li>• Yellow oleander poisoning</li> </ul>	<ul style="list-style-type: none"> <li>• Drowsiness/ Impaired consciousness</li> <li>• BP, heart rate</li> </ul>	<p>Patient presenting to PHC/CHC:</p> <ul style="list-style-type: none"> <li>• 12-lead ECG</li> <li>• Blood urea, serum creatinine</li> <li>• Electrolytes</li> <li>• Blood sugar</li> </ul>
EVALUATION AND TREATMENT OF UNSTABLE PATIENTS		EVALUATION AND MANAGEMENT OF STABLE PATIENTS
<p>1. TREATMENT OF ASSOCIATED CONDITIONS</p> <ul style="list-style-type: none"> <li>- Hyperkalemia</li> <li>- Suspected drug (BB or CCB) overdose:               <ol style="list-style-type: none"> <li>Withhold the drug</li> <li>IV Insulin (1 U/kg bolus followed by 0.5 U/kg/h) with glucose monitoring (or) IV glucagon if available</li> </ol> </li> </ul> <p>2. TEMPORARY PACEMAKER INSERTION (iv dopamine or adrenaline may be given till the time TPI can be placed)</p>		<p>Findings on 12-lead ECG</p> <ul style="list-style-type: none"> <li>• Atrioventricular block</li> <li>• Sinus node dysfunction</li> <li>• Other conduction disorders with 1:1 AV conduction</li> <li>• Non-diagnostic ECG</li> </ul>

INDICATIONS FOR URGENT TREATMENT/ REFERRAL		GENERAL APPROACH TO PATIENTS WITH SYMPTOMATIC BRADYCARDIA	
<ul style="list-style-type: none"><li>• Hypotension (SBP &lt;90 mmHg), Impaired consciousness or ongoing chest pain</li><li>• Recurrent or ongoing syncope/ pre-syncope</li><li>• Associated headache with or without neurologic deficit (suspect Intracranial event)</li><li>• Patient with a pre-existing device</li><li>• If ECG available, evidence of any of the following<ul style="list-style-type: none"><li>- Complete heart block</li><li>- Sinus node disease with pauses &gt;3 s long</li><li>- Bradycardia (HR &lt; 50 bpm)</li><li>(with or without hyperkalemia, serum K &gt; 5 mEq/L)</li></ul></li></ul>		<ol style="list-style-type: none"><li>1. Rule out associated conditions<ul style="list-style-type: none"><li>- Renal dysfunction, hyperkalemia</li><li>- Drug toxicity (BB, CCB, clonidine, Lithium)</li><li>- Sleep apnoea (clinical scoring systems such as Epworth Sleepiness Scale may be used for Initial assessment)</li></ul></li><li>2. Transthoracic echocardiography</li></ol>	
INDICATIONS FOR PERMANENT PACING			
AV NODAL DISEASE	SINUS NODE DYSFUNCTION	OTHER CONDUCTION DISORDERS WITH 1:1 AV CONDUCTION	
<ul style="list-style-type: none"><li>• Complete heart block, advanced AV block, or Mobitz Type II block</li><li>• Symptomatic patients with AV block other than above</li><li>• Associated neuromuscular disease</li></ul>	<ul style="list-style-type: none"><li>• Symptomatic patients with sinus pauses &gt; 3 s long with symptom correlation</li><li>• Asymptomatic patients with sinus pauses &gt; 6 s long</li></ul>	<ul style="list-style-type: none"><li>• Symptomatic patients with HV ≥100 ms on EPS</li><li>• Others (alternating BBB, infiltrative/ neuromuscular disease)</li></ul>	
RECOMMENDED PACING MODES		ADDITIONAL TESTING	
<ol style="list-style-type: none"><li>1. SND with intact AV conduction<ul style="list-style-type: none"><li>- Atrial-based single or dual chamber pacing</li><li>- VVI pacing is reasonable if symptoms are infrequent</li></ul></li><li>2. AV node disease<ul style="list-style-type: none"><li>- VVI/Dual chamber pacing in patients with LVEF &gt;50%</li><li>- CRT (or HBP) in patients with LVEF 36-50% and requiring ventricular pacing &gt;40% of the time</li><li>- CRT (or HBP) if LVD &lt;35%</li></ul></li></ol>		<ol style="list-style-type: none"><li>1. Advanced imaging (cmRI) may be needed if infiltrative disease is suspected</li><li>2. Ambulatory ECG may be needed<ul style="list-style-type: none"><li>- In patients with first or second degree AV block for symptom correlation</li><li>- In patients with suspected sinus node disease for detection of pauses and symptom correlation</li><li>- In symptomatic patients with LBBB or bifascicular block</li></ul></li><li>3. Implantable Loop Recorder and EPS (consult published society guidelines)</li></ol>	
ECG: SINUS BRADYCARDIA		ECG: THIRD DEGREE HEART BLOCK	
			
<p>This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (<a href="http://stw.iamr.org.in">stw.iamr.org.in</a>) for more information.</p> <p>© Indian Council of Medical Research and Department of Health Research, Ministry of Health &amp; Family Welfare, Government of India.</p>			

### 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	Permanent Pacemaker-single chamber	Permanent Pacemaker-double chamber
<b>i. At the time of Pre-authorization</b>		
a. Clinical notes with indication for implantation	Yes	Yes
b. ECG with report of cardiologist	Yes	Yes
c. Angiogram report, if done	Yes	Yes
<b>ii. At the time of claim submission</b>		
a. Procedure / Operative notes	Yes	Yes
b. X Ray showing pacemaker in situ	Yes	Yes
c. Detailed Discharge Summary	Yes	Yes
d. Invoice/barcode of designated pacemaker	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 patient ECG report abnormal requiring permanent pacemaker implantation? Yes

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

### **References**

1. ACC/AHA Guidelines for Implantation of Cardiac Pacemakers and Antiarrhythmia Devices: Executive Summary
2. Dalia T, Amr BS. Pacemaker Indications. [Updated 2020 Feb 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan



3. Bob-Manuel T, Nanda A, Latham S, Pour-Ghaz I, Skelton WP, Khouzam RN. Permanent pacemaker insertion in patients with conduction abnormalities post transcatheter aortic valve replacement: a review and proposed guidelines. *Ann Transl Med*. 2018 Jan;6(1):11
4. Kosztin A, Boros AM, Geller L, Merkely B. Cardiac resynchronisation therapy: current benefits and pitfalls. *Kardiol Pol*. 2018;76(10):1420-1425
5. Proclemer A, Zecchin M, D'Onofrio A, Boriani G, Facchin D, Rebellato L, Ghidina M, Bianco G, Bernardelli E, Pucher E, Gregori D. [The Pacemaker and Implantable Cardioverter-Defibrillator Registry of the Italian Association of Arrhythmology and Cardiac Pacing - Annual report 2016]. *G Ital Cardiol (Rome)*. 2018 Feb;19(2):119-131.