GUIDELINES
This policy does not certify benefits or authorization of benefits, which is designated by each individual policyholder contract. Paramount applies coding edits to all medical claims through coding logic software to evaluate the accuracy and adherence to accepted national standards. This guideline is solely for explaining correct procedure reporting and does not imply coverage and reimbursement.

SCOPE
X Professional
_ Facility

DESCRIPTION
The CardioMEMS™HF heart failure system is a wireless implantable hemodynamic monitor that measures pulmonary artery pressure (PAP) and heart rate in patients with heart failure. The system consists of an implantable PAP sensor, a transvenous catheter delivery system, a patient home monitoring electronic system, and a secure Internet-accessible database that allows clinicians to access the patient data. A dime-sized wireless sensor is permanently implanted in the pulmonary artery via fluoroscopy-guided right heart catheterization while the patient is mildly sedated. The CM-IHM home monitoring components comprise a pillow containing the antenna to capture the sensor reading, a bedside monitoring unit to which the pillow is connected via a cable, and a remote button. The system is simple to operate. Each sensor reading captures 18 seconds of data, which are wirelessly transmitted to a secure database that physicians can access and use to optimize heart failure medical management. Currently, there is a lack of evidence on the accuracy and clinical utility of CM-IHM patients with other New York Heart Association (NYHA) functional classifications.

The CardioMEMS™HF device system transmits information to a clinical staff that monitors and manages heart failure. The basis for Pulmonary Artery Pressure Monitoring is that real-time values of cardiac output will supplement the characteristic signs and symptoms and optimize the clinician’s medical management ability to intervene early to prevent acute decompensation and potentially reduce the need for Heart Failure related hospitalizations.

POLICY

HMO, PPO, Individual Marketplace
Implanted Wireless Pulmonary Artery Sensor (e.g., CardioMEMS™HF System) (33289) is non-covered

Advantage, Elite/ProMedica Medicare Plan
Implanted Wireless Pulmonary Artery Sensor (e.g., CardioMEMS™HF System) (33289) is covered with prior-authorization. Prior Authorization Effective Date 1/1/2020.

COVERAGE CRITERIA
HMO, PPO, Individual Marketplace
Paramount considers an implanted wireless pulmonary artery pressure sensor (e.g., CardioMEMS™HF System) (33289) experimental and investigational for heart failure and all other indications.

At this time, the current evidence is insufficient to support the use of ambulatory cardiac hemodynamic monitoring using an implantable pulmonary artery pressure measurement device in individuals with heart failure in an
outpatient setting. Data on long-term health benefits (including survival), safety issues, and quality of life are lacking. In addition, there is a lack of evidence on the accuracy and clinical utility of the device for use in other NYHA functional classifications.

**Advantage**

While there is insufficient evidence in the published medical literature to demonstrate the safety, efficacy and long-term outcomes of Pulmonary Artery Pressure Monitoring (CardioMEMS), The Ohio Department of Medicaid requires coverage for Advantage members.

**Clinical Indications:**

Implantable hemodynamic monitors (e.g., CardioMEMS™HF System) for heart failure may be covered when both (#1 and #2) of the following are met:

1. **ALL** of the following clinical criteria must be met:
   
   a. Has Congestive Heart Failure (CHF) that is difficult to monitor and treat.
   b. Documentation that the CHF is not due to medical non-compliance.
   c. Classified/Diagnosis as NYHA class III heart failure within 14 days of the implanting procedure.
   d. Has had at least one heart failure hospitalization in the previous 12 months.
   e. Reduced Ejection Fraction (EF) patients are receiving or have received a beta-blocker for 3 months and an ACE1 or ARB for one month unless the Member is intolerant to medication therapy.
   
   f. If the BMI is 35 or greater, the chest circumference at the axillary level must be less than 165 cm (or 65 inches).
   g. The pulmonary artery branch diameter is 7mm or more (assessed during the right heart catheterization procedure).
   h. Member must be able to tolerate the right heart catheterization procedure.
   i. There is documentation of Advance Care Planning including the designation of a Durable Power of Attorney for Healthcare (DPOAHC).

2. Member has **NONE** of the following:
   
   a. Active infection.
   b. History of recurrent pulmonary embolism or deep vein thrombosis.
   c. Major cardiovascular event within the previous two months.
   d. Cardiac resynchronization therapy (CRT) is likely in the next three months or within the previous three months.
   e. Congenital heart disease or mechanical right heart valve that is contraindicated for a right heart catheterization.
   f. Known coagulation disorders.
   g. Hypersensitivity or allergy to aspirin and / or clopidogrel.
   h. Likely to undergo evaluation for heart transplant or VAD implantation within the next six months.

**Facility Indications:**

**Clinical, Provider and Program Requirement – all of the following:**

1. Physician medical director who:
   
   a. devotes more than 40% of their practice in managing advanced heart failure patients
   AND
   b. is board certified or eligible in advanced heart failure management consistent with the ABIM subspecialty requirements.

2. A multi-disciplinary team of professionals dedicated to the management of heart failure patients, including but not limited to a clinical pharmacist and social worker.

3. Comprehensive telemonitoring services are available including remote heart failure monitoring and remote device monitoring.

4. The following outcome measures are monitored with annual reporting:
   
   a. Device complication for a minimum of 24 months
   b. Device failures for a minimum of 24 months
   c. Heart failure hospitalization rate 12 months
   d. Heart failure ED visits 12 months
   e. All-cause mortality 1 year
   f. Heart failure cause mortality 1 year
Elite/ProMedica Medicare Plan
An implanted wireless pulmonary artery pressure sensor (e.g., CardioMEMS™HF System) (C2624, C9741) is covered only for a Medicare-approved clinical trial. In February 2018, CMS approved the investigational device exemption (IDE) study titled, “Hemodynamic-GUIDEd Management of Heart Failure” (NCT03387813). [2] Therefore, this service may be covered only if the member is enrolled in a Medicare approved Category B IDE study.

CODING/BILLING INFORMATION
The appearance of a code in this section does not necessarily indicate coverage. Codes that are covered may have selection criteria that must be met. Payment for supplies may be included in payment for other services rendered.

<table>
<thead>
<tr>
<th>CPT CODES</th>
<th>Description</th>
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<tbody>
<tr>
<td>33289</td>
<td>Transcatheter implantation of wireless pulmonary artery pressure sensor for longterm hemodynamic monitoring, including deployment and calibration of the sensor, right heart catheterization, selective pulmonary catheterization, radiological supervision and interpretation, and pulmonary artery angiography, when performed</td>
</tr>
<tr>
<td>93264</td>
<td>Remote monitoring of a wireless pulmonary artery pressure sensor for up to 30 days, including at least weekly downloads of pulmonary artery pressure recordings, interpretation(s), trend analysis, and report(s) by a physician or other qualified health care professional</td>
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<table>
<thead>
<tr>
<th>HCPCS CODES</th>
<th>Description</th>
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<tbody>
<tr>
<td>C2624</td>
<td>Implantable wireless pulmonary artery pressure sensor with delivery catheter, including all system components</td>
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<tr>
<th>ICD-10 CODES</th>
<th>Description</th>
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<tbody>
<tr>
<td>I50.1-I50.9</td>
<td>Heart Failure</td>
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</table>

REVISION HISTORY EXPLANATION

ORIGINAL EFFECTIVE DATE: 09/23/2016

09/23/16: Policy created to reflect most current clinical evidence per the Technology Assessment Working Group (TAWG).

06/23/17: Policy reviewed and updated to reflect most current clinical evidence per the Technology Assessment Working Group (TAWG).

03/22/18: Implanted Wireless Pulmonary Artery Sensor (e.g., CardioMEMS HF System) (C2624, C9741) is covered without prior authorization only for a Medicare-approved clinical trial for Elite per CMS guidelines. Policy reviewed and updated to reflect most current clinical evidence per the Technology Assessment Working Group (TAWG).

11/14/19: Policy reviewed and updated to reflect most current clinical evidence per Medical Policy Steering Clinical Work Group, 111419. ODM coverage as of 1/1/2019 per ODM fee schedule. Elite allows coverage when part of the clinical study. Prior authorization effective 1/1/20, per 30 days prior authorization notice requirement.


REFERENCES/RESOURCES

Centers for Medicare and Medicaid Services, CMS Manual System and other CMS publications and services
Ohio Department of Medicaid
American Medical Association, Current Procedural Terminology (CPT®) and associated publications and services
Centers for Medicare and Medicaid Services, Healthcare Common Procedure Coding System, HCPCS Release and Code Sets
Industry Standard Review
Hayes, Inc.