# MEDICAL POLICY

| POLICY TITLE | SURGICAL TREATMENT OF HEART FAILURE |
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| POLICY NUMBER | MP-1.082 |

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| Original Issue Date (Created): | **8/23/2002** |
| Most Recent Review Date (Revised): | **7/20/2020** |
| **Effective Date:** | **10/1/2020** |



## I. POLICY

**Partial Left Ventriculectomy**

Partial left ventriculectomy is considered **not medically necessary.**

**Surgical Ventricular Restoration**

Surgical ventricular restoration is considered **investigational** for the treatment of ischemic dilated cardiomyopathy or post-infarction left ventricular aneurysm, as there is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

***Cross-reference:***

**MP-1.026** Total Artificial Hearts and Implantable Ventricular Assist Devices

## II. PRODUCT VARIATIONS

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This policy is only applicable to certain programs and products administered by Capital BlueCross please see additional information below, and subject to benefit variations as discussed in Section VI below.

**FEP PPO:** Refer to FEP Benefit Brochure for information on Surgical treatment of heart failure: *https://www.fepblue.org/benefit-plans/benefit-plans-brochures-and-forms*
Note* - The Federal Employee Program (FEP) Service Benefit Plan does not have a medical policy related to these services.

## III. DESCRIPTION/BACKGROUND

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### Partial Left Ventriculectomy

Partial left ventriculectomy (PLV) is a surgical procedure aimed at improving the hemodynamic status of patients with end-stage congestive heart failure (CHF) by directly reducing left ventricular size, and thereby improving the pump function of the left ventricle (LV).

This surgical approach to the treatment of congestive heart failure (CHF) (also known as the Batista procedure, cardio-reduction, or left ventricular remodeling surgery) is primarily directed at patients with an underlying non-ischemic dilated cardiomyopathy. Initially, the procedure was intended for patients awaiting cardiac transplantation, either as a "bridge" to transplantation or as an alternative to transplantation. The theoretical rationale for this procedure is that by reducing left ventricular wall volume, LV wall tension is reduced and left ventricle (LV) pumping function will be improved.

Treatment of heart failure is generally through lifestyle modifications and medications. Medications are effective for controlling the symptoms of heart failure, but progression of disease can still occur. For end-stage heart failure, consideration of cardiac transplantation is the main alternative. Ventricular assist devices (VADs) have been tested for this purpose, and total artificial hearts are also in development.

The original partial left ventriculectomy (PLV) procedure, as developed by Batista, involves a wide excision of the posterolateral wall and apex of the heart and removal of a wedge-shaped portion of the LV. PLV may be accompanied by repair of the mitral valve, either through valvuloplasty or annuloplasty. A variety of complications of PLV have been reported, including sudden death, progressive heart failure, arrhythmias, bleeding, renal failure, respiratory failure, and infection. More recently, modifications have been suggested that remove the septal-anterior wall preferentially, also called anterior PLV. The decision on the optimal approach may be determined by the degree of fibrosis seen in the apex and lateral walls.

### Surgical Ventricular Restoration

The surgical ventricular restoration (SVR) procedure is also known as surgical anterior ventricular endocardial restoration (SAVER), left ventricular reconstructive surgery, endoventricular circular plasty, or the Dor procedure (named after Vincent Dor, MD). Dr. Dor pioneered the expansion of techniques for ventricular reconstruction and is credited with treating heart failure patients with SVR in conjunction with coronary artery bypass grafting (CABG).

SVR procedure is usually performed after CABG and may proceed or be followed by mitral valve repair or replacement and other procedures such as endocardectomy and cryoablation for treatment of ventricular tachycardia. A key difference between SVR and ventriculectomy (i.e., for aneurysm removal) is that in SVR, circular "purse string" suturing is used around the border of the aneurysmal scar tissue. Tightening of this suture is believed to isolate the akinetic or dyskinetic scar, bring the healthy portion of the ventricular walls together, and restore a more normal ventricular contour. If the defect is large (i.e., an opening >3 cm), the ventricle may also

be reconstructed using patches of autologous or artificial material to maintain the desired ventricular volume and contour during closure of the ventriculotomy. In addition, SVR is distinct from partial left ventriculectomy (i.e., the Batista procedure); which does not attempt to specifically resect akinetic segments and restore ventricular contour.

## IV. RATIONALE

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**Partial Left Ventriculectomy: Summary of Evidence**

Some clinical series have reported improvement in ejection fraction and symptoms following PLV; however, there is a lack of controlled trials comparing this procedure to alternative treatments. Perioperative mortality and complications are high, and the improvements reported in symptoms may not be a result of the surgical procedure. The high rates of perioperative morbidity and mortality, the lack of demonstrated long-term outcome benefits, and the high relapse rates, have led to diminished enthusiasm for this procedure. As a result of the lack of evidence on benefits from the procedure, and the possibility of harms, PLV is considered not medically necessary.

**Surgical Ventricular Restoration: Summary of Evidence**

For individuals who have ischemic dilated cardiomyopathy who receive SVR as an adjunct to CABG, the evidence includes a large randomized controlled trial (another randomized controlled trial reported results, but most trial enrollees overlapped with those in the larger trial) and uncontrolled studies. Relevant outcomes are overall survival, symptoms, quality of life, hospitalizations, resource utilization, and treatment-related morbidity. The randomized controlled trial, the Surgical Treatment of Ischemic Heart Failure trial, did not report significant improvements in quality of life outcomes for patients undergoing SVR as an adjunct to standard CABG surgery. Several uncontrolled studies have suggested that SVR can improve hemodynamic functioning in selected patients with ischemic cardiomyopathy; however, these studies are considered lower quality evidence. The evidence is insufficient to determine the effects of the technology on health outcomes.

## V. DEFINITIONS

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**ANEURYSM** refers to a localized abnormal dilatation of a blood vessel, usually an artery, due to a congenital defect or weakness in the wall of a vessel.

**CARDIOMYOPATHY** is a disease of the myocardium (heart muscle) causing enlargement.

**CONGESTIVE HEART FAILURE** is an abnormal condition that reflects impaired cardiac pumping. Its causes include myocardial infarction, ischemic heart disease, and cardiomyopathy. Failure of the ventricles to eject blood efficiently results in volume overload, ventricular dilation, and elevated intracardiac pressure.

**ELECTROSTIMULATION** refers to the use of electric current to affect a tissue, such as a nerve, muscle, or bone.

**510 (K)** is a premarketing submission made to FDA to demonstrate that the device to be marketed is as safe and effective, that is, substantially equivalent (SE), to a legally marketed device that is not subject to premarket approval (PMA). Applicants must compare their 510(k) device to one or more similar devices currently on the U.S. market and make and support their substantial equivalency claims.

**LATISSIMUS DORSI** is one of a pair of large triangular muscles on the thoracic and lumbar areas of the back.

**MITRAL VALVE** is the cardiac valve between the left atrium and left ventricle.

**PERICARDIUM** is the membranous fibroserous sac enclosing the heart and the bases of the great vessels.

**SYNCHRONOUS** means occurring simultaneously.

**TACHYCARDIA** is an abnormally rapid heart rate, greater than one hundred (100) beats per minute.

## VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations should be based in all cases on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. A member's health benefit plan governs which services are covered, which are excluded, which are subject to benefit limits and which require preauthorization. There are different benefit plan designs in each product administered by Capital BlueCross. Members and providers should consult the member's health benefit plan for information or contact Capital BlueCross for benefit information.

## VII. DISCLAIMER

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*Capital BlueCross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital BlueCross' Provider Services or Member Services.*

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*Capital BlueCross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law.*

## VIII. CODING INFORMATION

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**Note:** This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

**Not Medically Necessary; therefore, not covered:**

| CPT Codes® | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 33542 | | | | | | | | |



**Investigational and therefore not covered for Surgical Ventricular Restoration**

| CPT Codes® | | | | | | | | |
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| 33548 | | | | | | | | |



## IX. REFERENCES

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**Partial Left Ventriculectomy**

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**Surgical Ventricular Restoration**

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## X. POLICY HISTORY

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|---|---|
| **MP 1.082** | **CAC 3/30/04** |
| | **CAC 11/30/04** |
| | **CAC 10/25/05** |
| | **CAC 10/31/06** |
| | **CAC 11/27/07** |
| | **CAC 11/25/08** |
| | **CAC 11/24/09 Consensus review**, policy statement unchanged. References updated. |
| | **CAC 4/26/11 Adopt BCBSA**, deleted information regarding Dynamic Cardiomyoplasty – this is an obsolete procedure. Other policy statements unchanged. |
| | **CAC 6/26/12 Consensus**-No change in policy statement, references updated. Added FEP variation to reference FEP Medical Policy Manual MP-7.01.103 Surgical Ventricular Restoration and 7.01.66 Partial Left Ventriculectomy. |
| | **7/26/13** Admin coding review complete |
| | **CAC 9/24/13 Minor review.** Changed policy statement related to partial left ventriculectomy from investigational to not medically necessary. References reviewed and updated. Deleted FEP variation referencing MP 7.01.66 Partial Left Ventriculectomy since this policy was archived. Added rationale section. |
| | **CAC 9/30/14** Consensus. References and Rationale sections updated. Coding reviewed |
| | **CAC 9/29/15 Consensus review.** No changes to the policy statements. Reference and rationale update. Coding Reviewed |
| | **CAC 9/27/2016 Consensus review**. No changes to the policy statements. Reference and rationale update. Coding Reviewed. Variation reformatting. |
| | **12/19/17 Consensus review.** Deleted "or postinfarction left ventricular aneurysm" from the policy statement. No new references added. Rationale updated. 2/28/18 Admin coding review. No changes. |
| | **11/1/18 Consensus review**. No change to policy statements. Rationale condensed. References reviewed. |
| | **08/05/2019 Consensus review**. No changes to policy statements. |
| | **7/20/20 Consensus Review.** No change to policy statements. References updated. |

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