

Prevea360 Health Plan Medical Policy

Policy Name: Heart Transplantation (Adult and Pediatric) MP9613

Effective Date: May 1, 2024

This policy was developed with input from specialists in cardiology, cardiovascular surgery, thoracic surgery and transplants, and endorsed by the Medical Policy Committee.

IMPORTANT INFORMATION – PLEASE READ BEFORE USING THIS POLICY

These services may or may not be covered by Prevea360 Health Plan. Coverage is subject to requirements in applicable federal or state laws. Please refer to the member's plan document for other specific coverage information. If there is a difference between this general information and the member's plan document, the member's plan document will be used to determine coverage. With respect to Medicare, Medicaid, and other government programs, this policy will apply unless these programs require different coverage. Members may contact Prevea360 Health Plan Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions may call the Provider Service Center. Please use the Quick Reference Guide on the Provider Communications page for the appropriate phone number.

<https://www.prevea360.com/Providers/Provider-communications-library>

Prevea360 Health Plan medical policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care, and treatment.

PURPOSE

To promote consistency between utilization management reviewers by providing the criteria that determines the medical necessity.

BACKGROUND

I. Definitions

- A. **Total artificial heart (TAH)** is an implantable biventricular support device that serves as a total replacement for both ventricles of the failing heart. The ventricles and valves are surgically excised and the device is sewn to the remaining atria (top half of the heart). The TAH replaces the function of the two ventricles and four valves by pumping blood to both the pulmonary and systemic circulation. The TAH provides circulatory support while waiting for a donor heart and may also restore kidney and liver function due to improved blood flow. The TAH is connected to two lines that exit through the skin and

Prevea360 Health Plan Medical Policy

connect to a large power generating console, which operates and monitors the device, while the patient is hospitalized. A portable power generating device (SynCardia Freedom® Driver System) is also available which allows the patient to leave the hospital. Currently there is only one FDA approved device, SynCardia temporary Total Artificial Heart (TAH-t).

- B. **Transplant or graft** is a portion of the body or a complete organ removed from its natural site and transferred to a separate site in the same or different individual.
- C. Transplant **evaluation** is a physical and psychosocial exam to determine if an individual is an acceptable candidate for transplantation. The specific exams and tests depend on the individual's diagnosis and health history and vary from hospital to hospital. Tests may include the following: cardiac evaluation; lung function tests; lab tests, including blood typing, chemistry panels, and serology testing for hepatitis, HIV and other common viruses; appropriate cancer surveillance, as indicated (e.g., colonoscopy, pap smear, mammogram, prostate cancer screening); dental evaluation with treatment of existing problems; psychosocial evaluation. Additional testing or clearance may be required to address other significant coexisting medical conditions.
- D. A **Ventricular Assist Device (VAD)** describes any of a variety of mechanical blood pumps that are used singularly to replace the function of either the right, left or both ventricles. A VAD may be appropriate in, but not limited to, the following situations:
1. To support individuals who have had open heart surgery and cannot be weaned from cardiopulmonary bypass.
 2. To support individuals after an acute myocardial infarction. Ventricular assistance after cardiotomy or a heart attack is usually short term (one day to two weeks).
 3. To support individuals awaiting a heart transplant (**bridge to transplant**).
 4. To support individuals in persistent/severe cardiogenic shock from any etiology.

BENEFIT CONSIDERATIONS

1. Prior authorization **is required** for:
 - Heart Transplantation **Evaluation**
 - Heart **Transplantation**
 - Please see the prior authorization list for product specific prior authorization requirements.
2. Refer to The Health Plan's Coverage Policies:
 - *Mechanical Circulatory Support Devices*, for ventricular assist devices (VADs) and total artificial heart (TAH) devices
 - *Gene Expression Profiling for Detection of Heart Transplantation Rejection*.
3. Coverage may vary according to the terms of the member's plan document.
4. Medica has entered into separate contracts with designated facilities to provide transplant-related health services, as described in the member's plan document.
5. Complex cases require medical director or external review and, as necessary, discussion with the patient's physician.

Prevea360 Health Plan Medical Policy

6. Underlying co-morbidity that significantly alters risk/benefit of transplant may preclude transplant eligibility.
7. If the Medical Necessity Criteria and Benefit Considerations are met, The Health Plan will authorize benefits within the limits in the member's plan document.
8. If the Medical Necessity Criteria and Benefit Considerations are not met, the case will be submitted to the medical director or external review for individual consideration. Practitioners are advised of the appeal process in their Provider Administrative Manual.

MEDICAL NECESSITY CRITERIA

I. Indications for Heart Transplant **Evaluation**

(NOTE: For multiorgan transplant, the individual must meet criteria for each organ. Please refer to applicable Medica UM policy.)

- A. Documentation in the medical records indicates that the individual has a diagnosis of heart disease refractory to other appropriate medical or surgical therapy due to **one of the following** conditions:
 1. New York Heart Association (*See Appendix 1*) functional Class III-IV or American Heart Association Stage D congestive heart failure; including but not limited to: idiopathic, ischemic, valvular, congenital, hypertrophic, familial, or other forms of cardiomyopathy
 2. Disabling heart disease, including refractory congestive heart failure or intractable angina on maximal medical therapy and not surgically correctable
 3. Congenital heart defects, that have failed previous surgical correction or that are not amenable to other medical **or** surgical intervention including, but not limited to:
 - a. Hypoplastic left heart syndrome
 - b. Transposition of the great arteries
 - c. Tricuspid atresia
 - d. Pulmonary atresia
 - e. Single ventricle with associated defects
 - f. Complex truncus arteriosus
 - g. Severe atrioventricular canal
 - h. Severe Ebstein's anomaly
 - i. Tetralogy of Fallot
 4. Primary cardiac tumors without metastasis
 5. Recurrent life-threatening arrhythmias not otherwise correctable
 6. Cardiac amyloidosis, light chain (AL) or transthyretin (ATTR) type

Prevea360 Health Plan Medical Policy

II. Indications for Heart **Transplantation**

Documentation in the medical records indicates that **all of the following** are met:

- A. The individual meets the institution's suitability criteria for transplant
- B. All of the criteria in section I are met.

III. Indications for Heart **Retransplantation**

Documentation in the medical records indicates that **all of the following** criteria are met:

- A. Failed previous heart transplantation
- B. All of the criteria in section II are met
- C. No history of behaviors since the previous transplant that would jeopardize a subsequent transplant.

CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS)

- For Medicare members, refer to the following, as applicable at:
<https://www.cms.gov/medicare-coverage-database/new-search/search.aspx>

DOCUMENT HISTORY

Original Effective Date	Created 12/21/2022
MPC Endorsement Date(s)	03/15/2023, 04/17/2024
Administrative Updates	04/17/2024

Prevea360 Health Plan Medical Policy

References:

Pre-06/2016 MPC:

1. Almenar-Bonet L, Sánchez-Lázaro IJ, Martínez-Dolz L. Is age a limiting factor for access to transplantation? *Transplant Proc.* 2011;43(6):2151-2153.
2. American Heart Association (AHA). Conditions: *Classes of Heart Failure*. http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure_UCM_306328_Article.jsp. Accessed February 27, 2015.
3. Behrman RE, Kliegman RM, Jenson HB, eds. Pediatric Heart and Heart-Lung Transplantation. In: *Nelson Textbook of Pediatrics*. 17th ed. Philadelphia, PA: Saunders; 2004;1587-1591.
4. Bestetti RB, Theodoropoulos TA. A systematic review of studies on heart transplantation for patients with end-stage Chagas' heart disease. *J Card Fail.* 2009;15(3):249-255.
5. Betkowski AS, Graff R, Chen JJ, Gaupman PJ. Panel-reactive antibody screening practices prior to heart transplantation. *J Heart Lung Transplant.* 2002;21(6):644-650.
6. Blume ED. Current status of heart transplantation in children: update 2003. *Pediatr Clin N Am.* 2003;50:1375-1391.
7. Burch M, Aurora P. Current status of paediatric heart, lung and heart-lung transplantation. *Arch Dis Child.* 2004;89:386-389.
8. Centers for Medicare and Medicaid Services (CMS). National Coverage Issues Manual, policy 260.9 *Heart Transplants*. <http://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=112&ncdver=3&DocID=260.9&bc=gAAAAAgAAAA&> Accessed February 27, 2015.
9. Chang PP, Longenecker JC, Wang NY, et al. Mild vs severe pulmonary hypertension before heart transplantation: different effects on posttransplantation pulmonary hypertension and mortality. *J Heart Lung Transplant.* August 2005;24(8):998-1007.
10. Coe P. Managing pulmonary hypertension in heart transplantation: meeting the challenge. *Critical Care Nurse.* April 2000;20(2).
11. Colvin-Adams M, Agnihotri A. Cardiac allograft vasculopathy: current knowledge and future direction. *Clin Transplant.* 2011;25(2):175-184.
12. De Bleser L, Dobbels F, Berben L, et al. The spectrum of nonadherence with medication in heart, liver, and lung transplant patients assessed in various ways. *Transpl Int.* 2011;24(9):882-891.
13. de la Torre MM, Delgado M, Paradela M, et al. Influence of body mass index in the postoperative evolution after lung transplantation. *Transplant Proc.* 2010;42(8):3026-3028.
14. Dubrey SW. Long term results of heart transplantation in patients with amyloid heart disease. *Heart.* February 2001;85(2):202-207.
15. Fabrizi F, Bunnapradisit S, Martin P. Treatment of hepatitis C in potential kidney and heart transplant patients. *Clin Liver Dis.* 2005;9:487-503.
16. From AM, Maleszewski JJ, Rihal CS. Current status of endomyocardial biopsy. *Mayo Clin Proc.* 2011;86(11):1095-1102.
17. Gorlitzer M, Ankersmit J, Fiegl N, et al. Is the transpulmonary pressure gradient a predictor for mortality after orthotopic cardiac transplantation? *Transpl Int.* April 2005;18(4):390-395.
18. Hayes, Inc. *Hayes Directory Report: Ventricular Assist Devices*. May 2005. Search last updated June 2007. [Archived]. Lansdale, PA.
19. Hunt SA, Kouretas PC, Balsam LB, Robbins RC. Heart Transplantation. In: Zipes DP, Libby P, Bonow RO, Braunwald E, eds. *Braunwald: Heart Disease: A Textbook of Cardiovascular Medicine*. 7th ed. Philadelphia, PA: Saunders; 2005:641-652.
20. ICSI. *Health Care Guideline: Heart Failure in Adults*. 13th ed. July 2013. Bloomington, MN.
21. Kato TS, Takayama H, Yoshizawa S, et al. Cardiac transplantation in patients with hypertrophic cardiomyopathy. *Am J Cardiol.* 2012;110(4):568-574.
22. Kienzl-Wagner K, Pratschke J, Brandacher G. Proteomics--a blessing or a curse? Application of proteomics technology to transplant medicine. *Transplantation.* 2011;92(5):499-509.
23. Kirklin JK, McGiffin DC, Pinderski LJ, Tallaj J. Selection of patients and techniques of heart transplantation. *Surg Clin N Am.* 2004;84:257-287.
24. Kobashigawa JA, Starling ED, Mehra MR, et al. Multicenter retrospective analysis of cardiovascular risk factors affecting long-term outcome of de novo cardiac transplant recipients. *J Heart Lung Transplant.* 2006;25(9):1063-1069.

Prevea360 Health Plan Medical Policy

25. Korb-Savoldelli V, Sabatier B, Gillaizeau F, et al. Non-adherence with drug treatment after heart or lung transplantation in adults: a systematic review. *Patient Educ Couns*. 2010;81(2):148-154.
26. Libby P, Bonow RO, Mann DL, Zipes DP, Eds. Surgical Management of Heart Failure. In: *Braunwald's Heart Disease: A Textbook of Cardiovascular Disease*. 8th ed. Philadelphia PA: Saunders; 2008: chap 27.
27. Lietz K. Pretransplant cachexia and morbid obesity are predictors of increased mortality after heart transplantation. *Transplantation*. July, 2001;72(2):277-283.
28. Mancini D, Lietz K. Selection of cardiac transplantation candidates in 2010. *Circ J*. 2010;122:173-183.
29. Maurer JR, Frost AE. International guidelines for the selection of lung transplant candidates. The International Society for Heart and Lung Transplantation, the American Thoracic Society, the American Society of Transplant Physicians, the European Respiratory Society. *J Heart Lung Transplantation*. 1998;17(7):703-709.
30. Mehra MR, Kobashigawa J, Starling R, et al. Listing criteria for heart transplantation: International Society for Heart and Lung Transplantation guidelines for the care of cardiac transplant candidates—2006. *J Heart Lung Transplantation*. June 2006;25:1024-1042.
31. Milla F, Pinney SP, Anyanwu AC. Indications for heart transplantation in current era of left ventricular assist devices. *Mt Sinai J Med*. 2012;79(3):305-316.
32. Miller L. Listing criteria for cardiac transplantation. *Transplantation*. October 1998;66(7):947-951.
33. National Institute for Health and Clinical Excellence (NICE). *Clinical Guideline: Chronic Heart Failure. No. 108* <http://www.nice.org.uk/guidance/CG108>. August 2010. Accessed: February 27, 2015.
34. New York Heart Association. *New York Heart Association Classification*. http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure_UCM_306328_Article.jsp. Accessed February 27, 2015.
35. Nwakanma LU, Williams JA, Weiss ES, Russell SD, Baumgartner QW, Conte JV. Influence of pretransplant panel-reactive antibody on outcomes in 8,160 heart transplant recipients in recent era. *Ann Thorac Surg*. 2007;84(5):1556-1562.
36. Rich S, McLaughlin VV. Pulmonary Hypertension. In: Zipes DP, Libby P, Bonow RO, Braunwald E, eds. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine*. 7th ed. Philadelphia, PA: Saunders; 2005:1807-1842.
37. Roland ME. Perspective: solid-organ transplantation in HIV-infected patients in the potent antiretroviral therapy era. *Top HIV Med*. July/August 2004;12(3):73-76.
38. Selik RM, Mokotoff ED, Branson B, Owen SM, Whitmore S, Hall HI. Revised Surveillance Case Definition for HIV Infection – United States, 2014. *MMWR*. April 11, 2014;63(RR03):1-10.
39. Shah KB, Parameshwar J. Advances in heart transplantation: the year in review. *J Heart Lung Transplant*. 2011;30(3):241-246.
40. Steinman TI, Becker BN, Frost AE, et al. Guidelines for the referral and management of patients eligible for solid organ transplantation. *Transplantation*. 2001;71:1189-1204.
41. Suzuki J, Isobe M, Morishita R, Hgai R. Characteristics of chronic rejection in heart transplantation: important elements of pathogenesis and future treatments. *Circ*. 2010;74:233-239.
42. Townsend S. Congenital Heart Disease. In: *Sabiston Textbook of Surgery*. 17th ed. Philadelphia, PA: W. B. Saunders; 2004:1836-1840.
43. United Network for Organ Sharing (UNOS). *Organ Procurement and Transplantation Network Policies*. http://optn.transplant.hrsa.gov/ContentDocuments/OPTN_Policies.pdf#nameddest=Policy_09. Updated March 31, 2015. Accessed April 6, 2015.
44. Walter K, Surjancev BP. Management of acute heart failure exacerbation. *Critical Care Clinics*. April 2001;17(2):321-335.

06/2016 MPC:

45. United Network for Organ Sharing (UNOS). *Organ Procurement and Transplantation Network Policies*. <https://optn.transplant.hrsa.gov/governance/policies/>. Updated April 14, 2016. Accessed May 18, 2016.

Prevea360 Health Plan Medical Policy

11/2016 MPC:

46. Bern C. Chagas disease: Management of acute disease, early chronic disease, and disease in immunocompromised hosts. Last updated November 16, 2015. In: *UpToDate*, Basow, DS (Ed), UpToDate, Waltham, MA, 2016.
47. Kransdorf EP, Czer LS, Luthringer DJ, et al. Heart transplantation for Chagas cardiomyopathy in the United States. *Am J Transplant*. December 2013;13(12):3262-3268. doi: 10.1111/ajt.12507. Epub 2013 Oct 28.
48. Marin-Neto JA, Simoes MV, Schmidt A, Rassi A. Chagas heart disease: Treatment and prognosis. Last updated August 04, 2016. In: *UpToDate*, Basow, DS (Ed), UpToDate, Waltham, MA, 2016.
49. Mehra MR, Canter CE, Hannan MM, et al. The 2016 International Society for Heart Lung Transplantation listing criteria for heart transplantation: A 10-year update. *J Heart Lung Transplant*. January 2016;35(1):1-23. doi: 10.1016/j.healun.2015.10.023.

2/2017 MPC:

50. United Network for Organ Sharing (UNOS). *Organ Procurement and Transplantation Network Policies*. <https://optn.transplant.hrsa.gov/governance/policies/>. Updated January 1, 2017. Accessed February 8, 2017.

2/2017 MPC:

51. American Heart Association (AHA). Conditions: Classes of Heart Failure. Updated May 8, 2017. http://www.heart.org/HEARTORG/Conditions/HeartFailure/AboutHeartFailure/Classes-of-Heart-Failure_UCM_306328_Article.jsp#.WjrPo03fMkl. Accessed December 20, 2017.
52. Organ Procurement and Transplantation Network (OPTN). *Policy 6: Allocation of Hearts and Heart-Lungs*. https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf. Updated December 12, 2017. Accessed December 27, 2017.

02/2019 MPC:

No new references

02/2020 MPC:

53. Organ Procurement and Transplantation Network (OPTN). *Policy 6: Allocation of Hearts and Heart-Lungs*. https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf. Updated December 04, 2019. Accessed January 08, 2020.

02/2021 MPC:

No new references

02/2022 MPC:

No new references

02/2023 MPC:

54. OPTUM® Transplant Review Guidelines, Solid Organ Transplantation. Effective November 3, 2022.

02/2024 MPC:

55. OPTUM® Transplant Review Guidelines, Solid Organ Transplantation. Effective December 7, 2023.

Prevea360 Health Plan Medical Policy

APPENDIX 1 – Heart Failure Classification

New York Heart Association (NYHA) Functional Classification

Class	Patient Symptoms
I	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, or shortness of breath.
II	Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, shortness of breath or chest pain.
III	Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, shortness of breath or chest pain.
IV	Symptoms of heart failure at rest. Any physical activity causes further discomfort.
Stage	Stages of Heart Failure Description
A At risk for heart failure	<p>People who are at risk for heart failure but do not yet have symptoms or structural or functional heart disease.</p> <p>Risk factors for people in this stage include hypertension, coronary vascular disease, diabetes, obesity, exposure to cardiotoxic agents, genetic variants for cardiomyopathy and family history of cardiomyopathy.</p>
B Pre-heart failure	People without current or previous symptoms of heart failure but with either structural heart disease, increased filling pressures in the heart or other risk factors.
C Symptomatic heart failure	People with current or previous symptoms of heart failure.
D Advanced heart failure	People with heart failure symptoms that interfere with daily life functions or lead to repeated hospitalizations.

Source: American Heart Association (AHA). Conditions: Classes of Heart Failure. Last Reviewed: June 7, 2023. <https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure/classes-of-heart-failure>