

Medical Coverage Policy

UTILIZATION * ALERT*

- Coverage of external breast prosthesis is subject to availability of member's benefit.
- Prior to use of this MCP for evaluation of medical necessity, benefit coverage MUST be verified in the member's EOC or benefit document.
- For Medicare members, please refer to the Medicare Coverage Database for coverage.
- Note: After searching the Medicare Coverage Database, if no NCD/LCD/LCA is found, then use the
 policy referenced above for coverage guidelines
- I. Service: Cardiac Rehabilitation
- II. Diagnosis: Cardiac event or condition as noted in History and Physical
- III. Specialty: Cardiology

IV. Coverage Overview

Patients with rehabilitative therapy benefits for physical therapy, speech therapy and occupational therapy qualify for coverage of cardiac rehabilitation. UM Physician review is required for all cardiac rehabilitation services.

- **A.** Patients who have had one or more of the following cardiac events in the past 365 days qualify for cardiac rehabilitation:
 - 1. Acute myocardial infarction;
 - 2. CABG (Coronary Artery Bypass Grafting):
 - 3. Percutaneous angioplasty, atherectomy and/or stenting;
 - 4. Cardiac valve replacement or repair;
 - 5. Heart Transplant or Heart-lung Transplant; or
 - 6. Placement of ventricular assist device
- **B.** Patients who have one of the following cardiac conditions qualify for cardiac rehabilitation:
 - 1. Stable angina pectoris;
 - 2. Angina Pectoris unresponsive to optimal medical therapy;
 - 3. Class II-IV CHF, EF < 35%, without admission in the past 6 weeks or planned procedures in the next 6 months; or
 - 4. Major pulmonary surgery, great vessel surgery or MAZE arrhythmia surgery



Medical Coverage Policy

- C. Additional cardiac rehabilitation services are medically necessary when any of the following occur:
 - 1. Patient has another cardiovascular surgery or angioplasty;
 - 2. Patient has another documented MI or extension of initial infarct;
 - 3. New clinically significant coronary lesions documented by cardiac catheterization; or,
 - 4. New evidence of ischemia on a stress test, including thallium scan
- **D.** Cardiac rehabilitation is considered *experimental and investigational* for all other indications.

V. Contraindications

- **A.** Unstable angina;
- **B.** Decompensated CHF;
- **C.** Symptomatic ventricular arrhythmias;
- **D.** Marked progressive worsening of exercise tolerance suggesting an acute pathologic process;
- **E.** Worsening of dyspnea during exercise over the previous three to five days;
- **F.** Uncontrolled diabetes, acute systemic illness or fever, recent embolism, acute pericarditis;
- G. Moderate to severe aortic stenosis, MI within three weeks, new onset of atrial fibrillation; or
- H. Acute thrombophlebitis

VI. Duration and Frequency

- **A.** We consider up to 36 cardiac rehabilitation sessions of cardiac exercise, and related services, to be reasonable and necessary.
- **B.** Patients receive 2 to 3 sessions per week for 12 to 18 weeks.
- **C.** Additional sessions require physician medical review of initial period of cardiac rehabilitation for authorization beyond 36 sessions. The maximum number of authorized sessions is 72 in a 36-week period.
- **D.** Medical necessary frequency and duration of cardiac rehabilitation is determined by the member's level of cardiac risk stratification.
- **E.** Acceptable exit criteria:
 - 1. The patient has achieved a stable level of exercise tolerance without ischemia or dysrhythmia; and
 - 2. Symptoms of angina or dyspnea are stable at the patient's maximum exercise level; and
 - 3. The patient's resting blood pressure and heart rate are within normal limits; and

VII. Components

A. Program

Cardiac rehabilitation programs must be comprehensive and include a medical evaluation, risk factor modification, (e.g., nutritional counseling), prescribed exercise, education, and counseling.

B. Facility



Medical Coverage Policy

The facility must have available for immediate use the necessary cardio-pulmonary, emergency, diagnostic, and therapeutic life-saving equipment accepted by the medical community as medically necessary, e.g., oxygen, cardiopulmonary resuscitation equipment, and defibrillator.

C. Physician and Staff

- The program must be staffed by trained clinicians in both basic and advanced life support techniques and in exercise therapy for cardiac disease, and in adequate numbers to conduct the program safely and effectively.
- 2. The program must be under the supervision of a physician.

References

- Exercise-based cardiac rehabilitation for coronary heart disease. Anderson L, Thompson DR, Oldridge N, Zwisler AD, Rees K, Martin N, Taylor RS, - Cochrane Database Syst Rev - January 1, 2016; (1); CD001800
- American Association of Cardiovascular and Pulmonary Rehabilitation, editor. Cardiac rehabilitation, secondary prevention programs, and the evolution of health care: providing optimal care for all patients. Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. 2013; 5th ed. Champaign, IL: Human Kinetics:1-4.
- 3. Balady GJ, Williams MA, Ades PA, et al. Core components of cardiac rehabilitation/secondary prevention programs. *Circulation*. May 2007; 115(20):2675-82.
- 4. Braverman DL Cardiac rehabilitation: a contemporary review. Am J Phys Med Rehabil. Jul 2011 90(7):599-611.
- Chrysohoou C, Angelis A, Tsitsinakis G, et al. Cardiovascular effects of high-intensity interval aerobic training combined with strength exercise in patients with chronic heart failure. A randomized phase III clinical trial. *Int J Cardiol.* Jan 2015; 179:269-74.
- 6. Contractor AS. Cardiac rehabilitation after myocardial infarction. *J Assoc Physicians India* Dec 2011; 59 Suppl: 51-5.
- 7. Griffo R. Effective secondary prevention through cardiac rehabilitation after coronary revascularization and predictors of poor adherence to lifestyle modification and medication. Results of the ICAROS Survey. *Int J Cardiol* Aug 2013; 167(4): 1390-5.
- 8. Haddadzadeh MH, Maiya AG, Padmakumar R, Shad B, Mirbolouk F. Effect of exercise-based cardiac rehabilitation on ejection fraction in coronary artery disease patients: a randomized controlled trial. *Heart Views*. Apr 2011 12(2):51-7.
- Medicare Coverage Database, Cardiac Rehabilitation Programs: 20.10.1 for Chronic Heart Failure;
 10.10 for other Cardiac conditions; 20.31 Intensive Cardiac Rehabilitation (ICR) Programs. Accessed
 12/18/2017.
- 10. Mezzani A. Aerobic exercise intensity assessment and prescription in cardiac rehabilitation: a joint position statement of the European Association for Cardiovascular Prevention and Rehabilitation, the



Medical Coverage Policy

American Association of Cardiovascular and Pulmonary Rehabilitation, and the Canadian Association of Cardiac Rehabilitation. - *J Cardiopulm Rehabil Prev* Nov 2012; 32(6): 327-50.

- 11. Pluss CE. Long-term effects of an expanded cardiac rehabilitation programme after myocardial infarction or coronary artery bypass surgery: a five-year follow-up of a randomized controlled study. *Clin Rehabil* Jan 2011; 25(1): 79-87.
- 12. Savage PA, Shaw AO, Miller MS, et al. Effect of resistance training on physical disability in chronic heart failure. *Medicine and Science in Sports and Exercise* 2011;43(8):1379-86.
- 13. Shepherd CW. Cardiac rehabilitation and quality of life: a systematic review. *Int J Nurs Stud* Jun 2012; 49(6): 755-71.
- 14. Smith SC, Bittner V, Gaziano JM et al. COCATS 4 Task Force 2: Training in Preventive Cardiovascular Medicine *J of Am Col Cardiology*) May 2015; 65 (17); 1754-62.
- 15. Soumagne D. Weber classification in cardiac rehabilitation. Acta Cardiol Jun 2012; 67(3): 285-90.
- 16. Thompson PD. Exercise-Based, Comprehensive Cardiac Rehabilitation Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine. Jan 2015. Pages 1015-1020.
- 17. Wong WP. A systematic review of economic evaluations of cardiac rehabilitation. *BMC Health Serv* Res Jan 2012; 12: 243.
- 18. Zullo MD, Jackson LW, Whalen CC, Dolansky MA Jan; Evaluation of the Recommended Core Components of Cardiac Rehabilitation Practice: An Opportunity for Quality Improvement. *J Cardiopulm Rehabil Prev.* Jan 2012 32(1):32-40.
- 19. Design and Administration of the Exercise Training Program Exercise-Based, Comprehensive Cardiac Rehabilitation>Practical Aspects of Cardiac Rehabilitation Programs>Design and Administration of the Exercise Training Program.Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine.Thompson, Paul D. Published January 1, 2015. © 2015
- Barriers for Nonparticipation and Dropout of Women in Cardiac Rehabilitation Programs: A
 Systematic Review. (English); Abstract available. By: Resurrección DM; Motrico E; Rigabert A;
 Rubio-Valera M; Conejo-Cerón S; Pastor L; Moreno-Peral P, Journal of Women's Health (2002) [J
 Womens Health (Larchmt)], ISSN: 1931-843X, 2017 Aug; Vol. 26 (8), pp. 849-859; Publisher: Mary
 Ann Liebert, Inc.; PMID: 28388314.
- 21. Is the Cardiovascular Response Equivalent Between a Supervised Center-Based Setting and a Self-care Home-Based Setting When Rating of Perceived Exertion Is Used to Guide Aerobic Exercise Intensity During a Cardiac Rehabilitation Program?(English); By: Tang LH; Zwisler AD; Berg SK; Doherty P; Taylor RS; Langberg H, American Journal of Physical Medicine & Rehabilitation [Am J Phys Med Rehabil], ISSN: 1537-7385, 2017 Jun; Vol. 96 (6), pp. 381-387; Publisher: Lippincott Williams & Wilkins; PMID: 27631388.
- 22. Frailty and Exercise Training: How to Provide Best Care after Cardiac Surgery or Intervention for Elder Patients with Valvular Disease (includes abstract). Tamuleviciute-Prasciene, Egle; Drulyte, Kristina; Jurenaite, Greta; Kubilius, Raimondas; Bjarnason-Wehrens, Birna; Biomed Research International, 9/13/2018; 2018 1-36. 36p. (Article) ISSN: 2314-6133.
- 23. Cardiac Rehabilitation and Readmissions after Heart Transplantation Bachmann, Justin M; Shah, Ashish S; Duncan Meredith S; Greevy, Jr., Robert A; Graves, Amy J; Ni, Shenghua; Ogi, Henry H; Wang, Thomas J; Thomas, Randal J; Whooley, Mary A; Freiberg, Matthew S. In Journal of Heart and



Medical Coverage Policy

- Lung Transplantation. April 2018 37(4) 467 Language: 1016/j.healun 2017.05.017.
- 24. Thoracic: The Effect of Early Cardiac Rehabilitation on Health-Related Quality of Life among Heart Transplant Recipients and Patients with Coronary Artery Bypass Graft Surgery by Hsu, C.-J; Chen, S.Y; Su, S; Yang, M.C.; Lan C; Chou N.K.; Hsu, R.B.; Lai J.S.; Wang, S.S in Transplantation Proceedings. 2011.43 (7) 2714-2717 Language: English DOI 10.1916/j transproceed 2011.04.025.
- 25. Krishnamurthi, Nirupama; Schopfer, David W.; Ahi, Tara; Bettencourt, Michael; Piros, Kimberly; Ringer, Rebecca; Shen, Hui; Kehler, Janice P.; Whooley, Mary A.. Predictors of Patient Participation and Completion of Home-Based Cardiac Rehabilitation in the Veterans Health Administration for Patients With Coronary Heart Disease. *The American Journal of Cardiology*. 1 January 2019 123(1):19-24 Language: English. DOI: 10.1016/j.amjcard.2018.09.024.
- 26. Bartels, M. N., & Prince, D. Z. (2021). Acute Medical Conditions: Cardiopulmonary Disease, Medical Frailty, and Renal Failure. *Braddom's Physical Medicine and Rehabilitation*, 511–534.e5. https://doi.org/10.1016/B978-0-323-62539-5.00027-8
- 27. Barker-Davies, R. M., O'Sullivan, O., Senaratne, K., Baker, P., Cranley, M., Dharm-Datta, S., Ellis, H., Goodall, D., Gough, M., Lewis, S., Norman, J., Papadopoulou, T., Roscoe, D., Sherwood, D., Turner, P., Walker, T., Mistlin, A., Phillip, R., Nicol, A. M., Bennett, A. N., ... Bahadur, S. (2020). The Stanford Hall consensus statement for post-COVID-19 rehabilitation. *British journal of sports medicine*, *54*(16), 949–959. https://doi.org/10.1136/bjsports-2020-102596
- 28. Norris, C. M., Yip, C., Nerenberg, K. A., Clavel, M. A., Pacheco, C., Foulds, H., Hardy, M., Gonsalves, C. A., Jaffer, S., Parry, M., Colella, T., Dhukai, A., Grewal, J., Price, J., Levinsson, A., Hart, D., Harvey, P. J., Van Spall, H., Sarfi, H., Sedlak, T. L., ... Mulvagh, S. L. (2020). State of the Science in Women's Cardiovascular Disease: A Canadian Perspective on the Influence of Sex and Gender. *Journal of the American Heart Association*, 9(4), e015634. https://doi.org/10.1161/JAHA.119.015634
- 29. Snoek, J. A., Prescott, E. I., van der Velde, A. E., Eijsvogels, T., Mikkelsen, N., Prins, L. F., Bruins, W., Meindersma, E., González-Juanatey, J. R., Peña-Gil, C., González-Salvado, V., Moatemri, F., Iliou, M. C., Marcin, T., Eser, P., Wilhelm, M., Van't Hof, A., & de Kluiver, E. P. (2020). Effectiveness of Home-Based Mobile Guided Cardiac Rehabilitation as Alternative Strategy for Nonparticipation in Clinic-Based Cardiac Rehabilitation Among Elderly Patients in Europe: A Randomized Clinical Trial. *JAMA cardiology*, e205218. Advance online publication. https://doi.org/10.1001/jamacardio.2020.5218.
- 30. Miranda, J., Underwood, D., Kuepfer-Thomas, M., Coulson, D., Park, A. C., Butler, S. J., Goldstein, R., Brooks, D., Everall, A. C., & Guilcher, S. (2020). Exploring transitions in care from pulmonary rehabilitation to home for persons with chronic obstructive pulmonary disease: A descriptive qualitative study. *Health expectations: an international journal of public participation in health care and health policy*, 23(2), 414–422. https://doi.org/10.1111/hex.13012
- Center for Medicare and Medicaid Services. National Coverage Database (NCD) for Cardiac Rehab programs for Chronic Heart Failure (20.10.1), NCD for Intensive Cardiac Rehab (20.31). CMS.gov. Accessed 11/27/2020.
- 32. Center for Medicare and Medicaid Services. Medicare Benefit Policy Manual. Chapter 15, 232 Cardiac



Medical Coverage Policy

- Rehabilitation (CR) and Intensive Cardiac Rehab (ICR). Services furnished on or after January 1, 2010. CMS.gov. Accessed 11/27/2020.
- 33. Centers for Medicare & Medicaid Services (CMS). CMS Manual System: Pub 100-03 Medicare National Coverage Determinations. Cardiac Rehabilitation Programs for Chronic Heart Failure. 2014; https://www.cms.gov/medicare-coveragedatabase/details/ncd-details.aspx?NCDId=359&ncdVer=1. Accessed February 10, 2020
- 35. Sumner, J., Harrison, A., & Doherty, P. (2017). The effectiveness of modern cardiac rehabilitation: A systematic review of recent observational studies in non-attenders versus attenders. *PloS one*, *12*(5), e0177658. https://doi.org/10.1371/journal.pone.0177658
- 36. Calabrese, M., Garofano, M., Palumbo, R., Di Pietro, P., Izzo, C., Damato, A., Venturini, E., Iesu, S., Virtuoso, N., Strianese, A., Ciccarelli, M., Galasso, G., & Vecchione, C. (2021). Exercise Training and Cardiac Rehabilitation in COVID-19 Patients with Cardiovascular Complications: State of Art. *Life* (Basel, Switzerland), 11(3), 259. https://doi.org/10.3390/life11030259
- 37. Shajrawi, A., Granat, M., Jones, I., & Astin, F. (2020). Physical Activity and Cardiac Self-Efficacy Levels During Early Recovery After Acute Myocardial Infarction: A Jordanian Study. *The journal of nursing research: JNR*, 29(1), e131. https://doi.org/10.1097/JNR.000000000000000408
- 38. Reese C; Nechwatal R; Farin E, Zeitschrift fur Evidenz, Fortbildung und Qualitat im Gesundheitswesen [Z Evid Fortbild Qual Gesundhwes]. What do rehabilitation patients expect from a telemedicine cardiac rehab aftercare? Results from interviews with rehabilitation patients]. Database: MEDLINE <u>PubMed</u> ISSN: 2212-0289, 2019 Jun; Vol. 143, pp. 43-48; Publisher: Elsevier Urban & Fischer; PMID: 31072808
- 39. MCG ® Ambulatory Care 27th edition Cardiac Rehabilitation ACG: A-0358 (AC), Accessed 06/21/2023
- 40. Bozkurt, B., Fonarow, G. C., Goldberg, L. R., Guglin, M., Josephson, R. A., Forman, D. E., Lin, G., Lindenfeld, J., O'Connor, C., Panjrath, G., Piña, I. L., Shah, T., Sinha, S. S., Wolfel, E., & ACC's Heart Failure and Transplant Section and Leadership Council (2021). Cardiac Rehabilitation for Patients with Heart Failure: JACC Expert Panel. *Journal of the American College of Cardiology*, 77(11), 1454–1469. https://doi.org/10.1016/j.jacc.2021.01.030
- 41. Dibben, G., Faulkner, J., Oldridge, N., Rees, K., Thompson, D. R., Zwisler, A. D., & Taylor, R. S. (2021). Exercise-based cardiac rehabilitation for coronary heart disease. *The Cochrane database of systematic reviews*, *11*(11), CD001800. https://doi.org/10.1002/14651858.CD001800.pub4
- 42. Abraham, L. N., Sibilitz, K. L., Berg, S. K., Tang, L. H., Risom, S. S., Lindschou, J., Taylor, R. S., Borregaard, B., & Zwisler, A. D. (2021). Exercise-based cardiac rehabilitation for adults after heart valve surgery. *The Cochrane database of systematic reviews*, *5*(5), CD010876. https://doi.org/10.1002/14651858.CD010876.pub3



Medical Coverage Policy

- 43. Risom, S. S., Zwisler, A. D., Johansen, P. P., Sibilitz, K. L., Lindschou, J., Gluud, C., Taylor, R. S., Svendsen, J. H., & Berg, S. K. (2017). Exercise-based cardiac rehabilitation for adults with atrial fibrillation. *The Cochrane database of systematic reviews*, 2(2), CD011197. https://doi.org/10.1002/14651858.CD011197.pub2
- 44. 2022 AHA/ACC Key Date Elements for Cardiovascular and Noncardiovascular Complications of COVI-19: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Data Standards.
 - https://www.sciencedirect.com/science/article/pii/S073510972204579X?via%3Dihub
- 45. Molloy, C. D., Long, L., Mordi, I. R., Bridges, C., Sagar, V. A., Davies, E. J., Coats, A. J. S., Dalal, H., Rees, K., Singh, S. J., & Taylor, R. S. (2023). Exercise-based cardiac rehabilitation for adults with heart failure 2023 Cochrane systematic review and meta-analysis. *European journal of heart failure*, 25(12), 2263–2273. https://doi.org/10.1002/ejhf.3046
- 46. Taylor, R. S., Dalal, H. M., & Zwisler, A. D. (2023). Cardiac rehabilitation for heart failure: 'Cinderella' or evidence-based pillar of care?. *European heart journal*, *44*(17), 1511–1518. https://doi.org/10.1093/eurheartj/ehad118



Medical Coverage Policy

Approval History

Date approved by	Date filed with the State of Maryland	Date of Implementation
RUMC*		(Ten days after filing)
03/18/2011	03/21/2011	04/01/2011
02/28/2012	02/29/2012	03/11/2012
02/27/2013	02/27/2013	03/10/2013
02/26/2014	02/27/2014	03/09/2014
02/25/2015	02/27/2015	03/10/2015
02/25/2016	02/29/2016	03/11/2016

Approval History

Effective June 01, 2016, state filing is no longer required per Maryland House Bill HB 798 – Health Insurance – Reporting

Date approved by RUMC*	Date of Implementation
02/27/2017	02/27/2017
02/28/2018	02/28/2018
01/29/2019	01/29/2019
01/14/2020	01/14/2020
01/20/2021	01/20/2021
01/24/2022	01/24/2022
09/30/2022	09/30/2022
08/24/2023	08/24/2023
07/24/2024	07/24/2024

^{*}The Regional Utilization Management Committee received delegated authority in 2011 to review and approve designated Utilization Management and Medical Coverage Policies by the Regional Quality Improvement Committee.

Note: Kaiser Permanente Mid-Atlantic States (KPMAS) include referral and authorization criteria to support primary care and specialty care practitioners, as appropriate, in caring for members with selected conditions. Medical Coverage Policies are not intended or designed as a substitute for the reasonable exercise of independent clinical judgment by a practitioner in any set of circumstances for an individual member.

©2024, Kaiser Foundation Health Plan of the Mid-Atlantic States, Inc. ©2024, Mid-Atlantic Permanente Medical Group, P.C.