

# FACTS

## Cardiac Rehabilitation

### Putting More Patients on the Road to Recovery

#### OVERVIEW

Each year, roughly 965,000 Americans will have a coronary event, and more than 30% of all events are recurrences.<sup>1,2</sup> However, there is hope. Cardiac rehabilitation (CR) reduces the risk of a future cardiac event by stabilizing, slowing, or even reversing the progression of cardiovascular disease (CVD).<sup>3</sup> Patients with other cardiovascular diseases such as heart failure can also benefit from CR programs.<sup>4,5</sup>

Despite its clear and tangible benefits, CR remains woefully underutilized, particularly among women and minorities.<sup>6,7,8</sup> The statistics present a worrisome story. Fewer than 20% of all eligible patients ever participate in a CR program.<sup>9</sup> The statistics are just as grim for eligible Medicare patients.<sup>10</sup> Many cardiovascular patients are not getting the life-saving rehabilitation they deserve. Research has shown CR reduces hospital readmissions and all-cause and CVD mortality.<sup>11,12</sup>

So, why aren't patients and their physicians leaping at this life-saving/life-changing opportunity? Reasons for low participation in CR include: the lack of a referral or a strong endorsement from the patient's physician; insurance status; financial and occupational constraints; and the lack of program availability and access.<sup>9,13</sup> New delivery models for health care offer opportunities to address patient barriers and lower costs to close the treatment gap between the benefits obtained from CR and participation in these programs.<sup>13,14</sup>

#### WHAT IS CARDIAC REHABILITATION?

Cardiac rehabilitation is a medically supervised program consisting of exercise training, education on heart-healthy living, counseling to reduce stress, and helping patients return to an active lifestyle and recover more quickly. CR offers a multifaceted and highly individualized approach to optimize the overall physical, mental, and social functioning of people with heart-related problems. It is recommended for both the inpatient and outpatient settings for the following conditions:<sup>15,16</sup>

- Recent myocardial infarction (heart attack)
- Percutaneous coronary intervention (PCI)
- Coronary artery bypass grafting (CABG)
- Chronic stable angina
- Stable, chronic heart failure
- Cardiac transplantation
- Valvular heart disease

Medicare provides reimbursement for all the recommended conditions, although coverage for heart failure (HF) is limited to patients with compromised ejection fraction (about half of the HF patient population).<sup>17,18</sup> CR sessions are limited to a maximum of two one-hour sessions per-day up to 36 sessions furnished over a period of up to 36 weeks with the option for an additional 36 sessions.<sup>18</sup> Reimbursement guidelines require CR programs to include five components:

- Physician-prescribed exercise
- Cardiac risk factor modification (education, counseling, and behavioral intervention)
- Psychosocial assessment
- Outcomes assessment
- Individualized treatment plan

#### HEALTH BENEFITS

Studies have shown that cardiac rehabilitation can improve the health and recovery of those who suffer from CVD. The reported benefits of CR include:

- Upon follow-up of at least 1-year to nearly 15 years, CR led to a reduction in all-cause mortality rates from 15% to 45%.<sup>11,12</sup>
- Lower CVD mortality of nearly 30%.<sup>11</sup>
- Lower readmissions of 31%.<sup>11</sup>
- Improved adherence with preventive medication.<sup>19</sup>
- Increased exercise performance.<sup>20</sup>
- Improved health factors like lipids and blood pressure.<sup>21</sup>
- Increased knowledge about cardiac disease and its management.<sup>22</sup>
- Enhanced ability to perform daily living activities.<sup>23</sup>
- Improved psychosocial symptoms and health-related quality of life.<sup>24</sup>

- Increased ability to return to work or engage in leisure activities.<sup>25</sup>

## FINANCIAL BENEFITS

Better health outcomes translate into reduced hospitalizations and use of medical resources.<sup>11</sup> A study presented at the Canadian Cardiovascular Congress found that CR resulted in a 31% reduction in hospital readmissions and a 26% drop in cardiovascular mortality – reducing costs associated with hospital admissions from heart attack by \$8.5 million a year for a 7% return on investment. The authors projected that if physician costs were included, the benefits would have been 15%-20% greater.<sup>26</sup> Another study found that CR can save patients \$640 per quality-adjusted year of life.<sup>27</sup>

## ENROLLMENT IS LIMITED

The elderly, women, minority populations, and patients with lower socioeconomic status are less likely to be referred to CR and unfortunately, are less likely to take that first critical step to enroll after referral.<sup>7,8,9,28,29</sup> This is of enormous concern because women and minorities are far more likely to die within 5 years after a first heart attack compared with white male patients.<sup>3</sup>

More research and piloting of innovative approaches are needed to identify delivery methods that will address and remove these barriers to CR enrollment and utilization.

### BARRIERS TO UTILIZATION<sup>2,13,30,31</sup>

- Lack of referral or strong encouragement to participate from the patient's physician
- Limited follow-up or facilitation of enrollment after referral
- Limited, or no health care coverage (cost)
- Work or home responsibilities
- Hours of operation that conflict with work demands and lack of facility capacity
- Scarcity of programs in rural areas or low income communities
- Distance to facility from patient's home
- Access to public transportation or parking issues
- Lack of perceived need for rehabilitation
- Male gender-dominated programs and little racial diversity among staff
- Language problems and cultural beliefs

## THE ASSOCIATION ADVOCATES

The American Heart Association is committed to public policies that will reduce the treatment gap for cardiac rehabilitation, with a specific focus on the most underserved populations: women, minorities, and low-income individuals. These policies include:

- Support S. 488/H.R. 3355, legislation that would allow physician assistants, nurse practitioners and clinical nurse specialists to directly *supervise* patients in cardiac and pulmonary rehabilitation programs on a day-to-day basis under Medicare.
- Creation and dissemination of information on the benefits of CR to physicians and health plans to enhance referral, follow-up, and reduce costs.

- Support for alternative models to traditional CR that address barriers associated with transportation and responsibilities at home or work.
- Monitoring the inclusion of meaningful coverage for CR in state essential health benefit packages.

<sup>1</sup> Mozaffarian, D., et al. 2015. Heart Disease and Stroke Statistics-2016 Update: A Report From the American Heart Association. Circulation.

<sup>2</sup> Community Surveillance Event Rates. Atherosclerosis Risk in Communities (ARIC) Study Web site. Available at: [http://www.csc.unc.edu/aric/displaydata.php?pg\\_id=377](http://www.csc.unc.edu/aric/displaydata.php?pg_id=377). Accessed on January 21, 2016.

<sup>3</sup> Balady GJ., et al. 2011. Referral, enrollment, and delivery of cardiac rehabilitation/secondary prevention programs at clinical centers and beyond: a presidential advisory from the American Heart Association. Circulation; 124:2951-2960.

<sup>4</sup> O'Connor, CM, et al. 2015. Efficacy and safety of exercise training in patients with chronic heart failure: HF-ACTION randomized controlled trial. JAMA. 2009.301.14: 1439-1450.

<sup>5</sup> Goel, K et al. 2015. Cardiac rehabilitation is associated with reduced long-term mortality in patients undergoing combined heart valve and CABG surgery. European journal of preventive cardiology. 22: 159-168.

<sup>6</sup> Centers for Disease Control and Prevention (CDC). 2008. Receipt of outpatient cardiac rehabilitation among heart attack survivors—United States, 2003. MMWR Morb Mortal Wkly Rep.;57:89-94.

<sup>7</sup> Colbert, J. D., et al. 2015. Cardiac rehabilitation referral, attendance and mortality in women. Eur J Prev Cardiol 22(8): 979-986.

<sup>8</sup> Menezes, AR, et al. 2014. Gender, race and cardiac rehabilitation in the United States: Is there a difference in care?. The American journal of the medical sciences. 348.2: 146-152.

<sup>9</sup> Boyden T, et al. 2010. Will increasing referral to cardiac rehabilitation improve participation? Prev Cardiol;13:198-202.

<sup>10</sup> Doll, JA., et al. 2015. Participation in Cardiac Rehabilitation Programs Among Older Patients After Acute Myocardial Infarction. JAMA Intern Med 175(10): 1700-1702.

<sup>11</sup> Goel, K., et al. 2011. Impact of cardiac rehabilitation on mortality and cardiovascular events after percutaneous coronary intervention in the community. Circulation 123(21): 2344-2352.

<sup>12</sup> Dunlay, SM et al. 2014. Participation in cardiac rehabilitation, readmissions, and death after acute myocardial infarction. The American journal of medicine. 127.6: 538-546

<sup>13</sup> Arena, R., et al. (2012). Increasing referral and participation rates to outpatient cardiac rehabilitation: the valuable role of healthcare professionals in the inpatient and home health settings: a science advisory from the American Heart Association. Circulation 125(10): 1321-1329.

<sup>14</sup> Sandesara, P, et al. 2015. Cardiac Rehabilitation and Risk Reduction: Time to "Rebrand and Reinvigorate". Journal of the American College of Cardiology. 65.: 389-395.

<sup>15</sup> Thomas, R. J., et al. 2010. AACVPR/ACCF/AHA 2010 Update: performance measures on cardiac rehabilitation for referral to cardiac rehabilitation/secondary prevention services: endorsed by the American College of Chest Physicians, the American College of Sports Medicine, the American Physical Therapy Association, the Canadian Association of Cardiac Rehabilitation, the Clinical Exercise Physiology Association, the European Association for Cardiovascular Prevention and Rehabilitation, the Inter-American Heart Foundation, the National Association of Clinical Nurse Specialists, the Preventive Cardiovascular Nurses Association, and the Society of Thoracic Surgeons. J Am Coll Cardiol 56(14): 1159-1167.

<sup>16</sup> Hillis, LD, et al. 2011. ACCF/AHA guideline for coronary artery bypass graft surgery: executive summary: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol, pp.123-210.

<sup>17</sup> Yip, G. W., et al. 2009. Heart failure with a normal ejection fraction: new developments. Heart 95(19): 1549-1552.

<sup>18</sup> Centers for Medicare and Medicare Services. "Decision Memo for Cardiac Rehabilitation (CR) Programs - Chronic Heart Failure." Available at: <https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=270> Accessed on January 27, 2016.

<sup>19</sup> Benz S, et al. 2013. Effect of Patient Navigation on Enrollment in Cardiac Rehabilitation. JAMA Intern Med.;173(3):244-246.

<sup>20</sup> Franklin, BA, et al. 2013. Exercise-based cardiac rehabilitation and improvements in cardiorespiratory fitness: implications regarding patient benefit. Mayo Clinic Proceedings. Vol. 88, No. 5. Elsevier.

<sup>21</sup> Kotseva, K et al. 2012. Use and effects of cardiac rehabilitation in patients with coronary heart disease: results from the EUROASPIRE III survey. European journal of preventive cardiology. 2047487312449591.

<sup>22</sup> Gomadam, P. S., et al. 2015. Degree and Direction of Change of Body Weight in Cardiac Rehabilitation and Impact on Exercise Capacity and Cardiac Risk Factors. Am J Cardiol.

<sup>23</sup> Johnston, M., et al. 2011. Impact of cardiac rehabilitation on the ability of elderly cardiac patients to perform common household tasks. J Cardiopulm Rehabil Prev 31(2): 100-104.

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<sup>25</sup> Williams MA, et al. 2006. Clinical evidence for a health benefit from cardiac rehabilitation: an update. Am Heart J;152(5):835-841.

<sup>26</sup> Humen D, et al. 2014. A Cost Analysis of Event Reduction Provided by a Comprehensive Cardiac Rehabilitation Program. Canadian Journal of Cardiology; 29.10: S156.

<sup>27</sup> Yu, CM., et al. 2004. A short course of cardiac rehabilitation program is highly cost effective in improving long-term quality of life in patients with recent myocardial infarction or percutaneous coronary intervention. Arch Phys Med Rehabil 85(12): 1915-1922.

<sup>28</sup> Marzolini, S., et al. 2015. Delays in Referral and Enrollment Are Associated With Mitigated Benefits of Cardiac Rehabilitation After Coronary Artery Bypass Surgery. Circ Cardiovasc Qual Outcomes 8(6): 608-620.

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<sup>31</sup> Pack, Q R., et al. 2014. The current and potential capacity for cardiac rehabilitation utilization in the United States. Journal of cardiopulmonary rehabilitation and prevention. 34.5: 318-326.