Clinical Policy Title: Cardiac rehabilitation

Clinical Policy Number: 04.02.02

Effective Date: September 1, 2013
Initial Review Date: February 19, 2013
Most Recent Review Date: February 15, 2017
Next Review Date: February 2018

Related policies:
None.

ABOUT THIS POLICY: Keystone First has developed clinical policies to assist with making coverage determinations. Keystone First’s clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of “medically necessary,” and the specific facts of the particular situation are considered by Keystone First when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Keystone First’s clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Keystone First’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First will update its clinical policies as necessary. Keystone First’s clinical policies are not guarantees of payment.

Coverage policy

Keystone First considers the use of cardiac rehabilitation (CR) to be clinically proven and, therefore, medically necessary when the following indications are present:

- Acute myocardial infarction (AMI) within 12 months.
- Coronary revascularization.
- Chronic stable angina.
- Valve replacement.
- Congestive heart failure (CHF).
- Heart or heart-lung transplantation.

Limitations:

All other uses of cardiac rehabilitation outside of the coverage policy are not clinically proven or medically necessary, as the effectiveness of these uses has not been established in peer-reviewed professional literature.
Alternative covered services:

Physician office visits and covered physical therapy.

**Background**

Coronary heart disease is the leading cause of death, and a major cause of disability, in the United States. While the controversy surrounding the benefits of primary prevention of heart disease continues, the benefits of secondary prevention, including cardiac rehabilitation, are broad and compelling. Studies involving cardiac rehabilitation have demonstrated decreased mortality, slowing of the atherosclerotic process, and decreased rates of coronary events and hospitalization. Other benefits include increased exercise tolerance; increased peak oxygen consumption; improvement in ADLs; improvement in angina; favorable effects on lipids (but little effect on LDL), weight and glucose metabolism; and improvement in stress, depression and social isolation. The ideal cardiac rehabilitation program (CRP) addresses the spectrum of cardiac risk factors, only one of which is exercise.

Only 10 percent – 20 percent of eligible patients take part in cardiac rehabilitation programs. Low rates of participation are associated with failure of referral (especially for elderly, ethnic minority and female patients), poor patient motivation, inadequate third-party payment and geographic limitations to access.

- Diabetes management.
- Hypertension management.
- Smoking cessation.
- Weight management.
- Psychosocial management.
- Physical activity counseling.
- equipment.
- Staff trained in basic and advanced life support techniques.
- Direct supervision of a physician.

**Searches**

Keystone First searched PubMed and the databases of:

- UK National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services (CMS).

Searches were conducted on December 19, 2016, using the terms “cardiac” and “rehabilitation.”
We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines based on systematic reviews.**
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

**Findings**

The medical evidence supports the hypothesis that a multifactorial CRP with secondary prevention measures maintained in the long term favorably influences prognosis in cardiac patients, and this benefit is distributed over both sexes (Anjo, 2014). Long-term moderate ET bestows a sustained improvement in functional capacity and quality of life in patients with CHF (Anderson, 2014). This benefit seems to translate into a favorable outcome.

**Policy updates:**

A systematic review of telerehabilitation (TR) for patients with cardiac conditions (Chan, 2016) provided evidence that a remote-monitoring CRP may provide benefits similar to traditional in-person care.

**Summary of clinical evidence:**

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
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</table>
| Chan (2016) | **Key points:**  
Exercise Telemonitoring and Telerehabilitation Compared with Traditional Cardiac and Pulmonary Rehabilitation: A Systematic Review and Meta-Analysis.  
- A systematic review examined TR, in which patients exercised in their communities while being monitored remotely via teletechnology.  
- The authors compared TR for the purposes of CR to determine whether the benefits of the exercise component of CR using TR are comparable to usual-care (UC) programs.  
- Meta-analyses were performed for peak oxygen consumption, peak workload, exercise test duration, and six-minute walk test (6MWT) distance using statistical and forest plots displaying standardized mean difference (SMD).  
- Of 1,431 citations found, eight CR studies met the inclusion criteria.  
- No differences were found in exercise outcomes between UC and TR groups for CR studies, except in exercise test duration, which slightly favored UC (SMD 0.268, 95% CI: 0.002, 0.534, p<0.05). |
### Anjo (2014)

The benefits of cardiac rehabilitation in coronary heart disease

**Key points:**

- A retrospective study of 858 patients assessed the prevalence of women in a CRP and their response to this intervention.
- All attendees entered an exercise-based CRP after an acute coronary syndrome or elective percutaneous coronary intervention (PCI), between January 2008 and December 2012.
- The patients were analyzed by gender, and the impact of the intervention on cardiovascular risk factors and serum cardiac markers was studied.
- In a subgroup of 386 patients, the impact on functional capacity, resting heart rate, chronotropic index, and heart rate recovery was also analyzed.
- Only 24% of the 858 patients who attended the program were women.
- Women showed statistically significant improvements in all cardiovascular risk factors, serum markers, functional capacity, and heart rate recovery (p<0.05) after the program.
- There were also improvements in resting heart rate and chronotropic index, but these were not statistically significant (p=0.08 and p=0.40, respectively).
- When the improvements in these two parameters were compared between genders, there was no statistically significant difference (p=0.33 and p=0.17, respectively).

### Anderson (2014)

Cardiac rehabilitation for people with heart disease

**Key points:**

- Exercise-based cardiac rehab is effective and safe for use in management of patients with AMI who have heart failure.
- Results from six Cochrane reviews that included 148 randomized controlled clinical trials.

### Belardinelli (1999)

Exercise training intervention after coronary angioplasty

**Key points:**

- Confirmed that low-risk conditions produce significant short-term results.
- Enrolled 94 patients (mean age 59 ± 14 years) with controlled heart failure randomized into two groups.
- Found that patients following a CRP (n = 48) had a significant reduction in mortality (P = 0.01) versus control group patients (n = 46) after a mean 14-month follow-up.

### References

#### Professional society guidelines/other:


#### Peer-reviewed references:


**CMS National Coverage Determination (NCDs):**

20.10 Cardiac Rehabilitation Programs. CMS Medicare Coverage Database website. [https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=36&ncdver=3&Cove rageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAAAACAAAAAA3d%3d&](https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=36&ncdver=3&Cove rageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAAAACAAAAAA3d%3d&). Accessed December 20, 2016.

20.10.1 Cardiac Rehabilitation Programs for Chronic Heart Failure. CMS Medicare Coverage Database website. [https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=359&ncdver=1&Cove rageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAAAACAAAAAA3d%3d&](https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=359&ncdver=1&Cove rageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAAAACAAAAAA3d%3d&). Accessed December 20, 2016.
20.31 Intensive Cardiac Rehabilitation (ICR) Programs. CMS Medicare Coverage Database website. https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=339&ncdver=1&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=All&list_type=ncd&bc=gAACAAAAAAA%3d%3d&. Accessed December 20, 2016.

20.31.3 Intensive Cardiac Rehabilitation Program – Benson-Henry Institute Cardiac Wellness Program. CMS Medicare Coverage Database website. https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=362&ncdver=1&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAACAAAAAAA%3d%3d&. Accessed December 20, 2016.

Local Coverage Determinations (LCDs):

L34412 Cardiac Rehabilitation. CMS Medicare Coverage Database website. https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=34412&ver=32&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=All&KeyWord=Cardiac+Rehabilitation&KeyWordLookUp=Title&KeyWordSearchType=And&list_type=ncd&bc=gAAAACAAAAAAA%3d%3d&. Accessed December 20, 2016.

Commonly submitted codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Comments</th>
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<tbody>
<tr>
<td>93797</td>
<td>Physician services for outpatient cardiac rehabilitation; without continuous electrocardiographic [ECG] monitoring [per session]</td>
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<tr>
<td>93798</td>
<td>Physician services for outpatient cardiac rehabilitation; with continuous ECG monitoring [per session]</td>
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<td>I20.1</td>
<td>Angina pectoris with documented spasm</td>
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<tr>
<td>I20.8</td>
<td>Other forms of angina pectoris</td>
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<tr>
<td>I20.9</td>
<td>Angina pectoris, unspecified</td>
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<tr>
<td>I21.01</td>
<td>ST elevation (STEMI) myocardial infarction involving left main coronary artery</td>
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<td>I21.02</td>
<td>ST elevation (STEMI) myocardial infarction involving left anterior descending coronary artery</td>
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<tr>
<td>I21.09</td>
<td>ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall</td>
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<td>Code</td>
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<tr>
<td>I21.11</td>
<td>ST elevation (STEMI) myocardial infarction involving right coronary artery</td>
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<td>I21.19</td>
<td>ST elevation (STEMI) myocardial infarction involving other coronary artery of inferior wall</td>
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<td>I21.21</td>
<td>ST elevation (STEMI) myocardial infarction involving left circumflex coronary artery</td>
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<td>I21.29</td>
<td>ST elevation (STEMI) myocardial infarction involving other sites</td>
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<td>I21.3</td>
<td>ST elevation (STEMI) myocardial infarction of unspecified site</td>
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<td>I21.4</td>
<td>Non-ST elevation (NSTEMI) myocardial infarction</td>
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<td>I22.0</td>
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<td>I22.1</td>
<td>Subsequent ST elevation (STEMI) myocardial infarction of inferior wall</td>
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<td>I22.8</td>
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<td>Subsequent ST elevation (STEMI) myocardial infarction of unspecified site</td>
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<td>I25.111</td>
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<td>Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris</td>
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<td>I25.701</td>
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<td>I25.708</td>
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<td>I25.711</td>
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<td>I25.718</td>
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<td>I25.751</td>
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<td>I25.758</td>
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<tr>
<td>I25.759</td>
<td>Atherosclerosis of native coronary artery of transplanted heart with unspecified angina pectoris</td>
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</tbody>
</table>
### I50.1 | Left ventricular failure
---|---
### I50.20 | Unspecified systolic (congestive) heart failure
### I50.22 | Chronic systolic (congestive) heart failure
### I50.30 | Unspecified diastolic (congestive) heart failure
### I50.32 | Chronic diastolic (congestive) heart failure
### I50.40 | Unspecified combined systolic (congestive) and diastolic (congestive) heart failure
### I50.42 | Chronic combined systolic (congestive) and diastolic (congestive) heart failure
### I50.49 | Heart failure, unspecified
### I50.9 | Heart failure, unspecified
### Z48.21 | Encounter for aftercare following heart transplant
### Z48.280 | Encounter for aftercare following heart-lung transplant
### Z94.1 | Heart transplant status
### Z94.3 | Heart and lungs transplant status
### Z9501 | Presence of aortocoronary bypass graft
### Z95.2 | Presence of prosthetic heart
### Z95.3 | Presence of xenogenic heart valve
### Z95.4 | Presence of other heart-valve replacement

<table>
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<tr>
<th>HCPCS Level II code</th>
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<td>G0422</td>
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</tr>
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<td>Intensive cardiac rehabilitation; with or without continuous ECG monitoring without exercise, per session</td>
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