### AACVPR Cardiac Rehabilitation Outcomes Matrix

<table>
<thead>
<tr>
<th>Core Components of Care</th>
<th>Clinical</th>
<th>Behavioral</th>
<th>Health</th>
<th>Service</th>
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</thead>
</table>
| **Overall Management**  | Risk factor profile  
Evaluation of symptoms  
Hemodynamic regulation  
Activity of daily living assessment | Self-efficacy  
1. Improved knowledge and application of self-care actions  
2. Return to desired physical activity level  
3. Desire to return to work  
Cardiac disease knowledge score  
Appropriate response to symptoms and complications  
Medication adherence/compliance  
Accessibility to needed resources  
Session attendance rate | Morbidity and Mortality  
1. Health care utilization:  
a. Hospitalizations / readmissions  
b. Emergency room visits  
c. Physician sick visits  
2. Untoward events during supervised sessions  
Health-related quality of life  
Return to work / loss of work days | Patient Satisfaction  
1. Satisfaction with the care received  
2. Progress toward goals |
| **Exercise Testing and Training** | Exercise Testing  
1. Maximal exercise test  
2. Sub-maximal exercise test (e.g., 6- or 12-minute walk test)  
Resting Exercise, & Recovery Responses  
1. Heart rate and rhythm  
2. Blood pressure  
3. Rating of perceived effort  
4. Exercise METS  
5. Rating of perceived dyspnea  
6. Oxygen saturation level | Exercise Compliance  
1. Supervised sessions  
2. Home or outside sessions  
3. Adherence to exercise prescription | Energy expenditure  
1. Minutes of physical activity/week  
2. Calories burned daily/weekly  
Physical activity stage of change | Performance Measures  
1. Cost per patient  
2. Program cost  
3. Enrollment rate  
4. Dropout rate  
5. Completion rate  
6. Admission rate |
| **Strength and Flexibility Training** | Strength measures (e.g., 1 RM, grip dynamometer)  
Flexibility measures (e.g., sit-and-reach test, goniometer) |  |
| **Lipid Management** | Lipid levels  
Adjustment in medication dosage | Adherence to diet, exercise, and medications | Diet and exercise stage of change |  |
| **Hypertension Management** | Resting blood pressure  
Exercise/recovery blood pressures  
Adjustment in medication dosage | Adherence to diet, exercise, and medications | Diet and exercise stage of change  
Self-monitoring behaviors |  |
| **Diabetes Management** | Blood glucose levels  
HgA1c  
Adjustment in medication dosage | Adherence to diet, exercise, and medications | Diet and exercise stage of change  
Self-monitoring behaviors |  |
| **Nutrition and Weight Management** | Anthropometric Measures  
1. Height/weight/BMI  
2. Body fat/lean body weight measures  
3. Abdominal circumference  
4. Sum of skinfolds/girths  
Nutritional biochemical markers | Adherence to diet and exercise | Diet and exercise stage of change  
Diet recording logs  
Physical activity recording logs  
Diet habit scores |  |
| **Psychosocial Management** | Measurements of Mood  
Depression, anxiety, hostility, emotional distress  
Measurements of Cognitive Function  
Memory, orientation, judgment | Coping mechanisms  
Stress management and relaxation skills  
Social support network  
Sexual dysfunction |  |  |
| **Smoking Cessation** | Serum cotinine levels  
Exhaled carbon monoxide  
Number of cigarettes/cigars smoked per day  
Duration of smoking habit (pack-years) | Smoking stage of change |  |  |

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References


Balady GJ, Williams MA, Ades PA, Bittner V, Comoss P, Foody JM, Franklin B, Sanderson B, Southard D. Core components of cardiac rehabilitation/secondary prevention programs: 2007 update: A scientific statement from the American Heart Association Exercise, Cardiac Rehabilitation, and Prevention Committee, the Council on Clinical Cardiology; the Councils on Cardiovascular Nursing, Epidemiology and Prevention, and Nutrition, Physical Activity, and Metabolism; and the American Association of Cardiovascular and Pulmonary Rehabilitation. *Journal of Cardiopulmonary Rehabilitation & Prevention.* 27(3):121-129, May/June
