The Role of Cardiac Rehabilitation in Recovery & Secondary Prevention

Loren M Stabile, MS
Cardiac & Pulmonary Rehab Program Manager
Objectives

• Core Components of Cardiac Rehab Program

• CR Indications & Eligibility Criteria

• CR Utilization & Benefits

• The Center For Cardiac Fitness CR Patient Outcomes
The Cardiac Rehab Triad

Exercise

Behavior Modification

Education & Counseling
Cardiac Rehabilitation

Cardiac Rehab is a medically supervised program of monitored cardiovascular conditioning, behavior modification, counseling & education aimed at reducing the risk factors associated with heart disease for the purpose of secondary prevention.

MISSION

To restore and maintain an individual’s optimal physiological, psychological, social and vocational status.

American Association of Cardiovascular and Pulmonary Rehabilitation, Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs, fifth edition; Human Kinetics, 2013
AHA/AACVPR Scientific Statement

Core Components of Cardiac Rehabilitation/Secondary Prevention Programs

A Statement for Healthcare Professionals From the American Heart Association and the American Association of Cardiovascular and Pulmonary Rehabilitation

Writing Group

Gary J. Balady, MD (chair); Philip A. Ades, MD; Patricia Comosso, RN; Marian Limacher, MD; Ileana L. Pina, MD; Douglas Southard, PhD; Mark A. Williams, PhD; Terry Bazzarre, PhD

Cardiac rehabilitation/secondary prevention programs are recognized as integral to the comprehensive care of patients with cardiovascular disease. In 1994, the American Heart Association stated that cardiac rehabilitation programs should consist of a multifaceted and multi-
CR Core components

• Evaluation, Intervention & Expected outcomes in each of the 10 core components of Cardiac Rehab

  o Patient Assessment
  o Nutrition Counseling
  o Weight Management
  o Blood Pressure Management
    o Lipid Management
  o Diabetes Management
    o Tobacco Cessation
  o Psychosocial Management
  o Physical Activity Counseling
    o Exercise Training
A Team of Health Care Professionals

Partners in Patient Care: A Collaborative Team Approach

- Referring Physician
- Medical Director
- Registered Nurses
- Exercise Physiologists
- Physical Therapists
- Dieticians
- Behavioral psychologist
- Social Workers
- Pharmacists
- Health Educators
- Nurse Case Managers
Cardiac Rehabilitation
Program Structure

- Medically Supervised
- Monitored Progressive Exercise
- Lifestyle Modification
- Physician Referral Required
- 36 sessions
  - 3x week for 12 weeks or 2x week for 18 weeks
- A comprehensive, individualized Treatment Plan
- A case management model
Case Management Model

- Coordinate the patients individualized treatment plan
- Establishes goals & interventions
- Provide reassessments every 30 days
- Review and progress the Exercise Prescription
- Address risk factor reduction strategies
- Makes referrals to ancillary staff (Nutritionist, Pharmacist, Behavioral therapist)
- Correspond with referring physicians
- Track and evaluate patient outcomes
Continuum of Care Model

Initial Assessment → Evaluation of Risk factors →

Goal Setting → Establish Plan of Care →

Plan Implementation → 30, 60, 90 day Reassessment →

→ Outcomes Evaluation
What Diagnoses are Covered?

Insurance covers CR for 7 clinical indications when referral is made within 12 months of the event or intervention.

- Myocardial Infarction
- Coronary Artery Bypass Surgery
- Valve Repair or Replacement
- Coronary Angioplasty or Coronary Stenting
- Heart Transplant
- Stable Angina
- Heart Failure* as of March 2014

*EF < 35% & NYHA class II-IV symptoms despite optimal HF therapy for at least 6 weeks, without a recent hospitalization in the past 6 weeks or major cardiac procedure/hospitalization in the last 6 months
CVD Prevalence

- About **600,000 people** die of heart disease in the United States every year (*1 in every 4 deaths*)
- About **720,000 Americans** have a heart attack every year.
- Heart disease is the **leading cause of death** for both men and women.
- About **5.1 million** people in the United States have heart failure
- Greater than **2 million** Americans are eligible for cardiac rehab (secondary prevention) post ACS, MI, PCI or CABG

AHA 2014 and CDC 2014
CR Participation Gap

• However CR is highly underutilized

• Most studies suggest that less than 40% of eligible patients ever attend outpatient Cardiac Rehab. Ranges vary 11% - 38% depending on the area of the country
  • Idaho: 6.9% - 2007 *
  • Nebraska: 53.9% - 2007 *

• Likely represents one of the greatest quality gaps in the secondary prevention of heart disease

*Suaya, JA et al. Circulation. 2007;116:1653-1662
ACC/AHA guideline Recommendation: Referral to CR is a **Class I level** of recommendation both in an inpatient & outpatient setting for patients post: MI, PCI, CABG, Stable Angina, HF, Valve Surgery or Heart Transplant

AACVPR/ACC/AHA 2007 Performance Measures on Cardiac Rehabilitation for Referral to and Delivery of Cardiac Rehabilitation/Secondary Prevention Services

Endorsed by the American College of Chest Physicians, American College of Sports Medicine, American Physical Therapy Association, Canadian Association of Cardiac Rehabilitation, European Association for Cardiovascular Prevention and Rehabilitation, Inter-American Heart Foundation, National Association of Clinical Nurse Specialists, Preventive Cardiovascular Nurses Association, and the Society of Thoracic Surgeons

Writing Committee Members

Randal J. Thomas, MD, MS, FAHA, FACP, Chair
Marjorie King, MD, FACC, FAACVPR
Karen Lui, RN, MS, FAACVPR
Neil Oldridge, PhD, FAACVPR
Ileana L. Piña, MD, FACC
John Spertus, MD, MPH, FACC

A Timely Referral & Quick Enrollment

• A key component to CR utilization is a timely referral

• **Goal**: is to establish an automatic referral process to CR before hospital discharge or at the follow up outpatient office visit.

• Success with enrolling patients in CR is scheduling the first appointment soon after they leave the hospital*

• Compared with the standard median time from hospital discharge (35 days), enrolling patients into CR rehab within 10 days after discharge significantly improved patient participation.

* An Early Appointment to Outpatient Cardiac Rehabilitation at Hospital Discharge Improves Attendance at Orientation: A Randomized, Single-Blind, Controlled Trial. Quinn R. Pack, Mouhamad Mansour, Joaquim S. Barboza, et al. Circulation. published online December 18, 2012
Research Evidence Supporting

Benefits of Cardiac Rehab

Physiological

- ↑ Exercise tolerance
- ↑ Muscle Strength
- ↓ Symptoms of angina
- ↓ Myocardial Ischemia
- ↓ Morbidity / Mortality

Psychosocial

- ↑ Return to Work
- ↓ Depression
- ↓ Anxiety
- ↑ Psychological Well being
- ↑ Quality of Life

Improved Health Habits

- Dietary, Exercise, & Smoking Habits
- Body weight & Lipid profile

A Landmark Study!*  

Methods:
• Studied 601,099 Medicare beneficiaries
• Examined 1 to 5 year mortality rates in CR users & nonusers
• Compared 70,040 propensity-based matched groups (CR participation versus non-participation)

Results:
• Only 12.2% of the cohort used Cardiac Rehabilitation
• Significantly lower (p 0.001) 1- to 5-year mortality rates in CR users than nonusers
• At 1 year, Cardiac Rehabilitation participants ( > 24 sessions) had a 58% relative risk reduction for mortality
• At 5 years, Cardiac Rehabilitation participants had a 34% relative risk reduction for mortality
• Mortality reductions extended to all demographic & clinical subgroups including patients with acute MI, HF & revascularization procedures.

Dose Response Relationship for CR Sessions and Risk of Death / MI *

<table>
<thead>
<tr>
<th>Sessions Attended</th>
<th>36 vs 24 Sessions</th>
<th>36 vs 12 Sessions</th>
<th>36 vs 1 Sessions</th>
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<tbody>
<tr>
<td>Risk of Death</td>
<td>- 14%</td>
<td>- 22%</td>
<td>- 47%</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>- 12%</td>
<td>- 23%</td>
<td>- 31%</td>
</tr>
</tbody>
</table>

*Relationship Between Cardiac Rehabilitation and Long-Term Risks of Death and Myocardial Infarction Among Elderly Medicare Beneficiaries. Hammill, BG. et al. Circulation. 2010;121:6370*
Utilization Benefits:

• Decreased severity of angina & need for anti-angina medications
• Decreased hospitalizations
• Reduced risk of fatal MI *
• Decreased cost of physician office visits & hospitalizations*
• Decreased ER visits*
• Decreased all-cause mortality
• Cost effectiveness

Studies, adjusted for quality of life, show savings of $4,950 - $9,200 per year of life saved**

How Are These Benefits Achieved?

Individualized **Exercise** Prescription

Comprehensive **Education** & **Counseling**

Aggressive **Behavior Modification** & **Risk Reduction Strategies**

Implemented By:
A Multidisciplinary team of healthcare professionals
Cleveland Clinic & The Cardiac Fitness Center

Patient Volumes 2014

Phase II visits
- Cleveland Clinic: 4760
- The Center For Cardiac Fitness: 3335

Phase III visits
- Cleveland Clinic: 16,724
- The Center For Cardiac Fitness: 15,332
2005 – 2013 Cardiac Rehab Diagnoses
4,402 Patients

PCI: 59%
MI: 43%
CABG: 22%
Valve: 12%
CHF: 9%
Angina: 9%
Transplant: .5%
<table>
<thead>
<tr>
<th>Indicator</th>
<th>The Center For Cardiac Fitness</th>
<th>AACVPR Registry (N= 41,787)</th>
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<tbody>
<tr>
<td><strong>METS</strong></td>
<td>2.1</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Weight loss lbs</strong></td>
<td>6.0</td>
<td>4</td>
</tr>
<tr>
<td><strong>QOL – SF 36</strong></td>
<td>Physical 17% Emotional 5%</td>
<td>Physical 13% Emotional 8%</td>
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<tr>
<td><strong>Depression PHQ–9</strong></td>
<td>45%</td>
<td>42%</td>
</tr>
<tr>
<td><strong>Anxiety- GAD -7</strong></td>
<td>14%</td>
<td>Data not available</td>
</tr>
<tr>
<td><strong>LDL</strong></td>
<td>18%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Rate Your Plate</strong></td>
<td>7%</td>
<td>7%</td>
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</table>
## CR Gender Differences at CCF

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
<tr>
<td>Enrollment</td>
<td>71 %</td>
<td>27%</td>
</tr>
<tr>
<td>Average Age</td>
<td>67</td>
<td>65</td>
</tr>
<tr>
<td>Functional status entrance</td>
<td>6.8</td>
<td>5.7</td>
</tr>
<tr>
<td>Change in functional status</td>
<td>2.2</td>
<td>1.4</td>
</tr>
<tr>
<td>BMI at entrance</td>
<td>29.9</td>
<td>31.0</td>
</tr>
<tr>
<td>Weight loss</td>
<td>6 lbs</td>
<td>6 lbs</td>
</tr>
</tbody>
</table>
Low Participation Rates in CR for Women

CR Participation rates among eligible women range from about 15%-20% *

Provider oriented barriers
• Low referral rates for women
• Physician endorsement – strength of the recommendation

Patient orientated barriers
• Less interested
• Family obligations – concern for family members
• Transportation problems
• Expense

Women under represented in CR include: elderly, obese, depressed, nonwhites, lower exercise capacity & less social support

Exercise Training

- **Telemetry Monitoring** based on Risk Stratification

- **Individualized** Exercise Prescription

- **Based on**
  - Functional capacity from entrance stress test
  - Orthopedic Restrictions and limitations
  - Functional & occupational goals

- **Exercise session consists of**
  - 20-50 minutes of cardiovascular conditioning
  - 10-15 minutes of resistance training
  - 10-15 minutes of stretching & relaxation
Exercise Prescription

CARDIOVASCULAR
Frequency, Duration, Mode, Progression & Intensity

Intensity
- THR (70-85% MHR or 50-70% of HRR)
- METS (50-70% MMETS)
- RPE (3-5 or 11-13)

RESISTIVE TRAINING
- 60% of 1 Repetition Max
- Muscle fatigue @ 12-15 reps
- 1-2 sets for the major muscle groups
Delivering Patient Education
In ways that meet Learning Needs

**PROBLEM:** Meeting patient’s Individual Learning Needs based on:
- age, cultural differences, educational levels, learning styles

**SOLUTION:** education provided through different formats ……
- One on one consults
- Classroom Lectures
- Small group workshops
- Interactive Activities & Events
- Support Groups
- Family Education
- Education books, handouts, bulletin boards & display

**GOAL:** Our health care professionals want to provide a creative, enjoyable and interactive environment to assist patients with making behavioral changes.
Ancillary programs & Workshops

* Cooking Demonstrations
* Super Market Tours
* Diabetes Workshops
* Family Nights
* Pharmacy consults
* LVAD, HT Support group
* Cardiac Yoga Classes
* Nutritional Consults
* Behavioral consults
* Circuit training classes
BEHAVIOR MODIFICATION

RISK FACTOR & PSYCHOSOCIAL COUNSELING

• Smoking Cessation
• Weight Management
• Diabetes Management
• Stages of Changes

Psychosocial Management
• Depression & Anxiety
• Pain & Anger Management
• Adjustment to Illness

• Sexual Dysfunction & Intimacy Issues
• Exercise & Medication Compliance
The Center for Cardiac Fitness
Programs & Services

- Cardiac Rehabilitation

- Cardiac Maintenance (self pay)

- Health For Life (self – pay)
  - Primary Prevention Program
  - Peripheral Vascular Disease
  - Bariatric Rehab
  - Weight Management
Cardiac Rehab & Prevention Programs

GOALS:
- Improve functional capacity
- Identify, modify, and manage risk factors to reduce disability, morbidity & mortality
- Alleviate/lessen activity related symptoms
- Educate patients regarding the management of heart disease & prevention strategies
- Improve quality of life
CR & Prevention Program's

• The **Best Medicine** for patients with heart disease or at risk for heart disease!