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The Role of Cardiac Rehabilitation in Recovery & Secondary Prevention

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Objectives

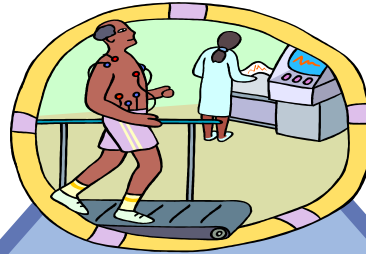
- **Core Components of Cardiac Rehab Program**
- **CR Indications & Eligibility Criteria**
- **CR Utilization & Benefits**
- **The Center For Cardiac Fitness CR Patient Outcomes**

The Cardiac Rehab Triad



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Exercise



Behavior Modification



Education & Counseling



Cardiac Rehabilitation



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*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.

CR Core Components

2000, 2007, 2010



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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**

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Cardiac rehabilitation/secondary prevention programs are recognized as integral to the comprehensive care of patients with cardiovascular disease.^{1,2} In 1994, the American Heart Association stated that cardiac rehabilitation programs should consist of a multifaceted and multi-

comes in each of the core components of cardiac rehabilitation/secondary prevention programs: baseline patient assessment; nutritional counseling; risk factor management (lipids, hypertension, weight, diabetes, and smoking); psychosocial management; physical activity counseling; and

CR Core components



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- Evaluation, Intervention & Expected outcomes in each of the 10 core components of Cardiac Rehab
 - Patient Assessment
 - Nutrition Counseling
 - Weight Management
 - Blood Pressure Management
 - Lipid Management
 - Diabetes Management
 - Tobacco Cessation
 - Psychosocial Management
 - Physical Activity Counseling
 - Exercise Training



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A Team of Health Care Professionals

Partners in Patient Care: A Collaborative Team Approach

- Referring Physician
- Medical Director
- Registered Nurses
- Exercise Physiologists
- Physical Therapists
- Dietitians
- Behavioral psychologist
- Social Workers
- Pharmacists
- Health Educators
- Nurse Case Managers



Cardiac Rehabilitation Program Structure



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- 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



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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



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Initial Assessment → Evaluation of Risk factors →

Goal Setting → Establish Plan of Care →

Plan Implementation → 30, 60, 90 day
Reassessment

→ Outcomes Evaluation



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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 \leq 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



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- 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



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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

Cardiac Rehab Referral



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

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AACVPR/ACC/AHA PERFORMANCE MEASURES

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

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A Timely Referral & Quick Enrollment



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- 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



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Physiological

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

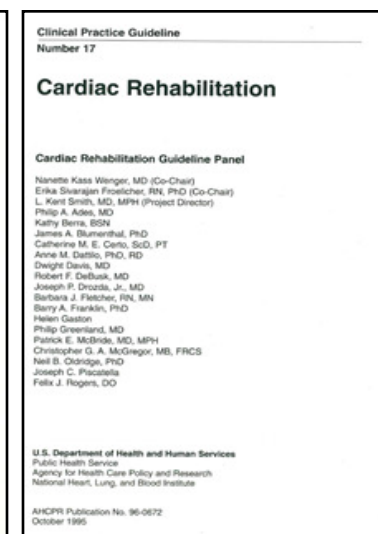
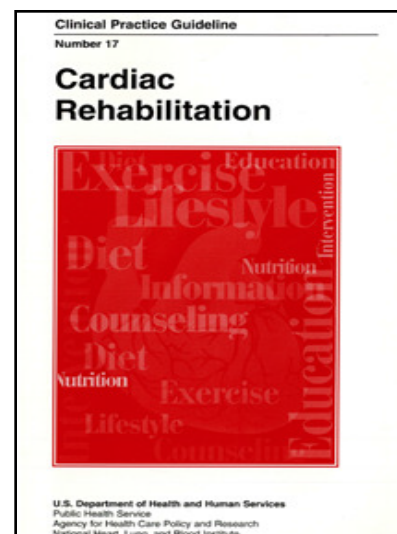
Psychosocial

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

Improved Health Habits

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

Agency for Health Care Policy and Research, U.S.
Department of Health and Human Services. Cardiac
Rehabilitation Clinical Practice Guidelines. Publication
No. 96-0672, October 1995



A Landmark Study!*



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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.

* Coronary Artery Disease Cardiac Rehabilitation and Survival in Older Coronary Patients. Suaya, JA., et al. J Am Coll Cardiol 2009;54:25-33

Dose Response Relationship for CR



Sessions and Risk of Death / MI *

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Sessions Attended	36 vs 24 Sessions	36 vs 12 Sessions	36 vs 1 Sessions
Risk of Death	- 14%	- 22%	- 47%
Myocardial Infarction	- 12%	- 23%	- 31%

*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:



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- 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**

*Ades, PA, et al (2000) Medical Clinics of North America

*Sudlow, C, et al (1999) Clinical Evidence *Lavie, CJ, et al (1999) Cardiology Clinics

**Oldridge, N., et al. *American Journal of Cardiology*. 1993;72:154-161.

**Ades, P., et al. *Journal of Cardiopulmonary Rehabilitation*. 1997;17:222-231

How Are These Benefits Achieved?



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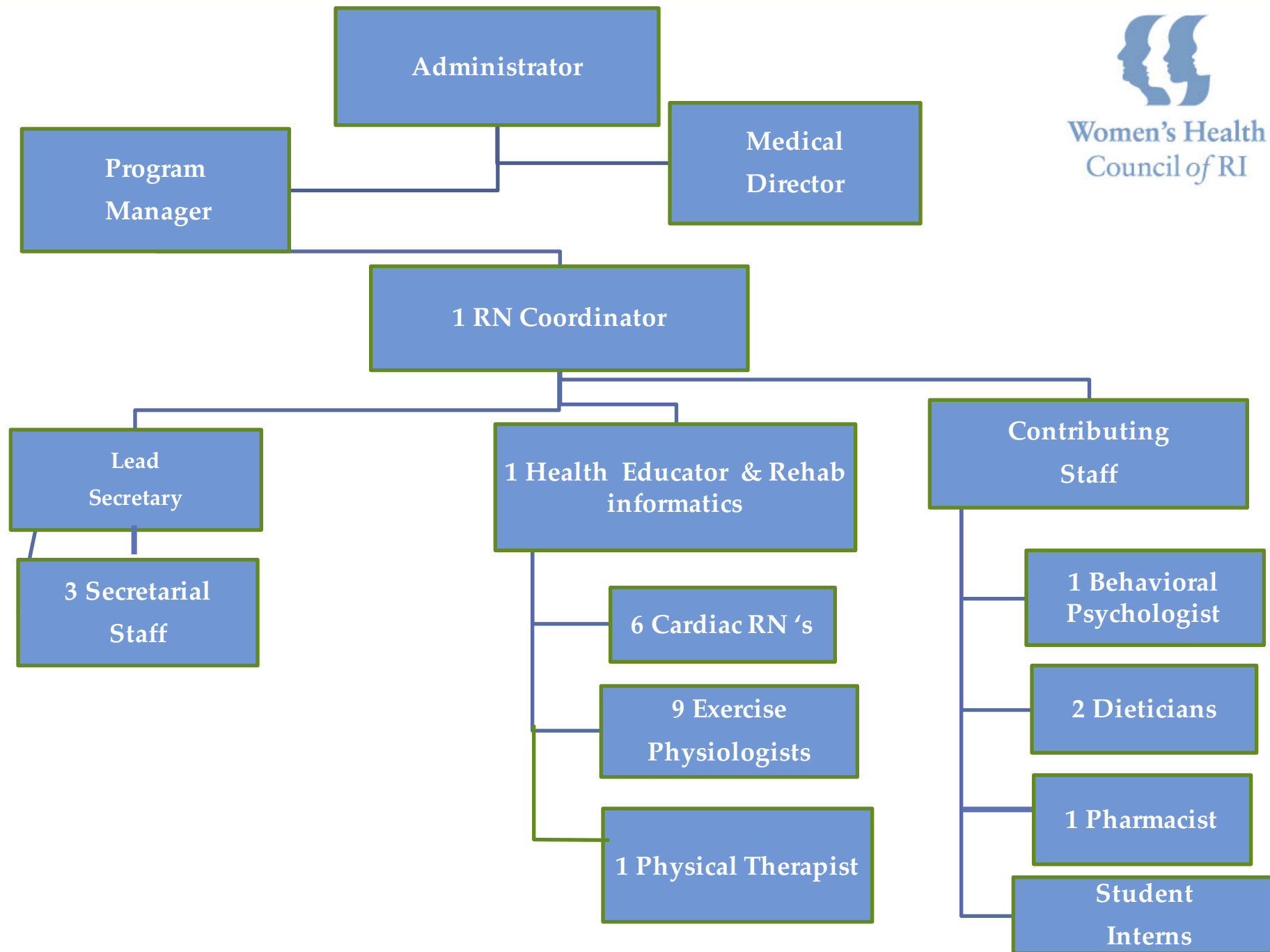
Individualized **Exercise** Prescription
Comprehensive **Education & Counseling**
Aggressive **Behavior Modification** & Risk
Reduction Strategies

Implemented By:

A Multidisciplinary team of healthcare professionals

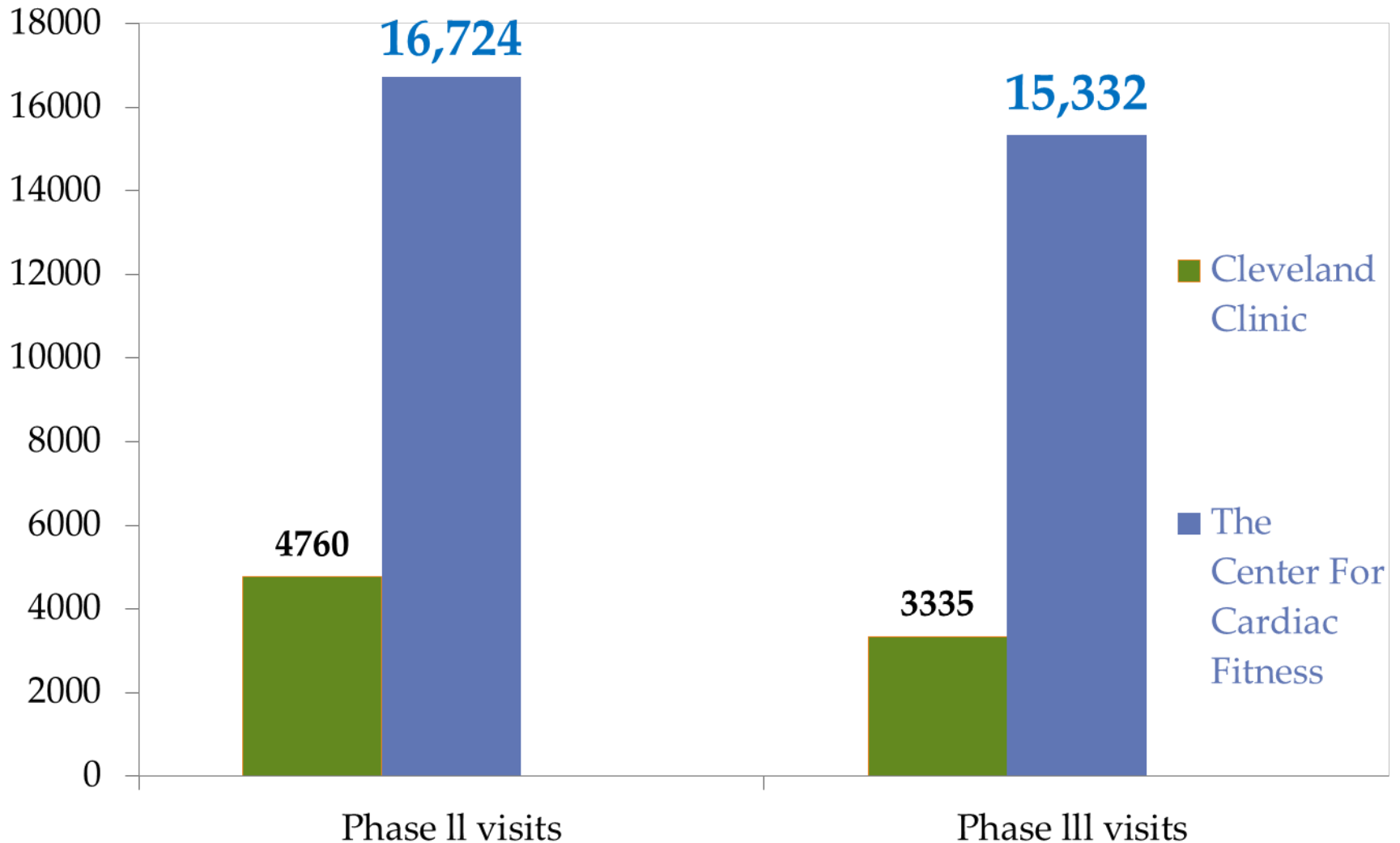


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Patient Volumes 2014

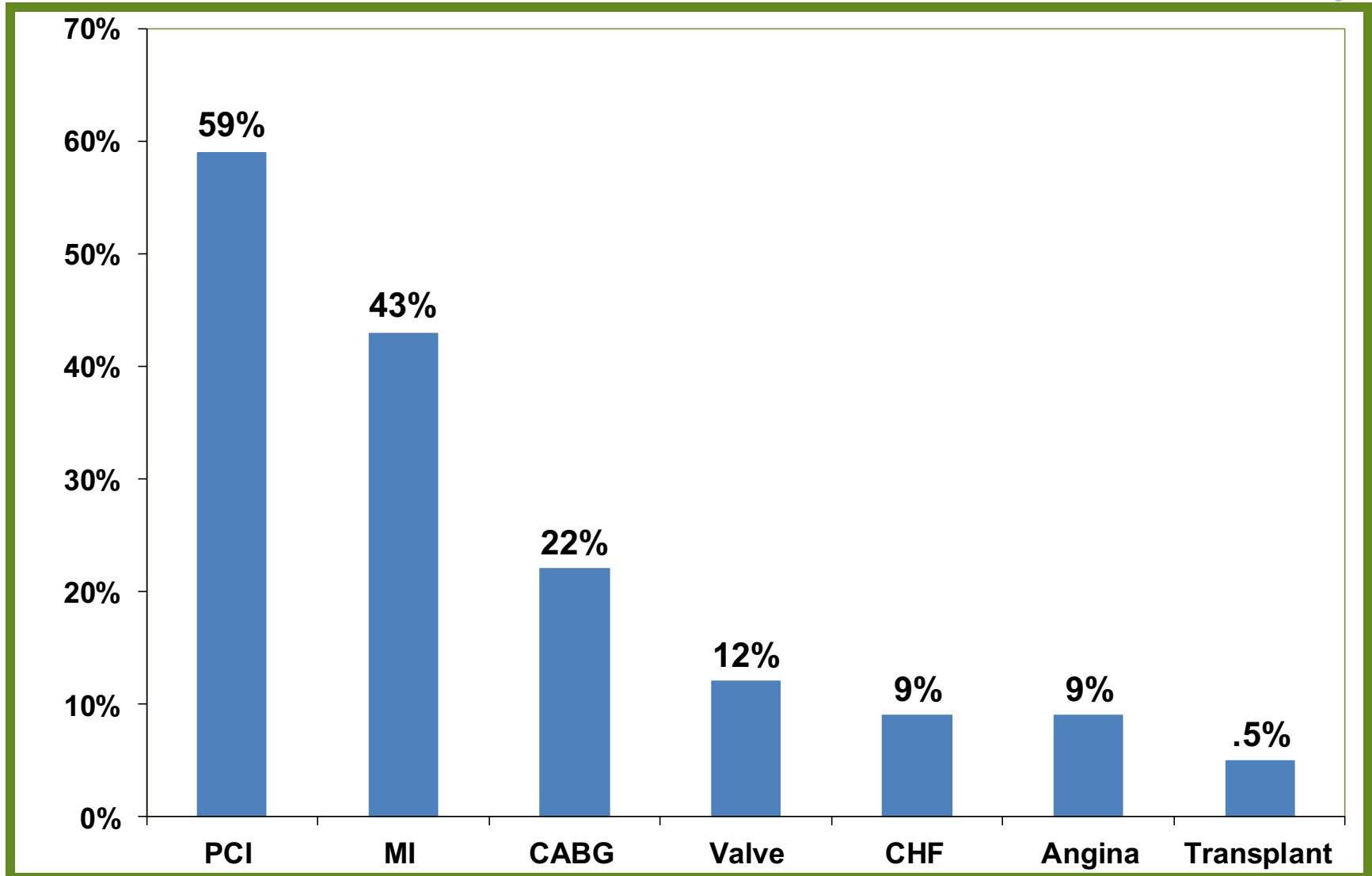


2005 – 2013 Cardiac Rehab Diagnoses

4,402 Patients



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CR Patient Outcomes 2014



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Indicator	The Center For Cardiac Fitness N= 447	AACVPR Registry (N= 41,787)
METS	2.1	1.6
Weight loss lbs	6.0	4
QOL – SF 36	Physical 17 % Emotional 5 %	Physical 13% Emotional 8%
Depression PHQ -9	45%	42%
Anxiety- GAD -7	14%	Data not available
LDL	18%	18%
Rate Your Plate	7%	7%



CR Gender Differences at CCF

	Male	Female
Enrollment	71 %	27%
Average Age	67	65
Functional status entrance	6.8	5.7
Change in functional status	2.2	1.4
BMI at entrance	29.9	31.0
Weight loss	6 lbs	6 lbs

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

**Examining The Challenges of Recruiting Women Into Cardiac Rehab. Beckie, Theresa et al. J of Cardiopulmonary Rehab Prev 2009;29(1):13-23*

Exercise Training



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- **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



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Exercise Prescription

CARDIOVASCULAR

Frequency, Duration, Mode, Progression & Intensity

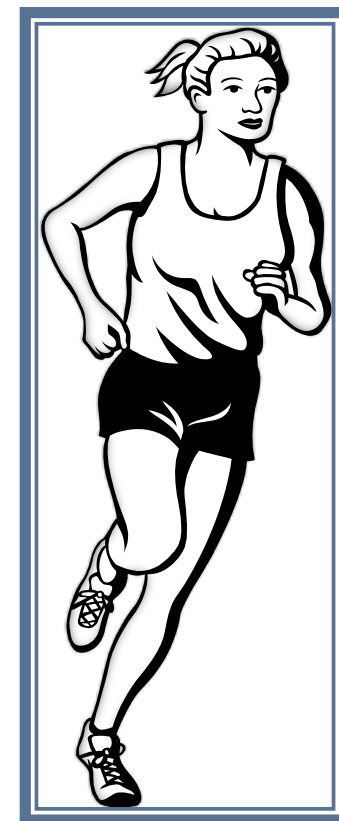
Intensity

- 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



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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



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- * 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



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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



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- **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



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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



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

