Cardiac Rehabilitation for Veterans with Heart Failure

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  - Patient-Centered Outcomes Research Institute (Co-I)
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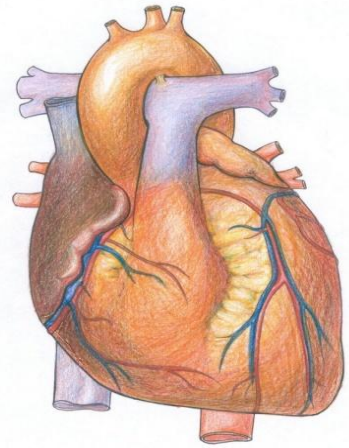
  - VHA HSR&D CHF QUERI (Associate Director)
  - VHA Office of Informatics and Analytics
  - VHA Office of Rural Health
  - Janssen Healthcare Innovation

Overview:
Cardiac Rehabilitation for Veterans with Heart Failure



- Benefits of cardiac rehab/exercise training for IHD, valvular heart disease, heart transplant are well-known
- Evidence of similar benefits for HF patients are also well-established, but CMS indication for CR have lagged
- Updated AHA/ACC Heart Failure Guidelines - 2013
- What's happening in VHA

Cardiac Rehabilitation

Multifactorial Program:

- Exercise/physical activity
  - Prescription and Surveillance: Advance activity amidst clinical instability
- Education
- Risk factor management
- Nutrition (weight management, ↓cholesterol, ↓sugar, ↓salt)
- Psychosocial support

Team Approach

- Cardiologist; Nurse; Exercise physiologist; Nutritionist; Psychologist

AACVPR/AACF/AHA Performance Measures for Referral to CR

All patients who within the past 12 months have experienced:

- Acute myocardial infarction
- Chronic stable angina
- Coronary artery bypass grafting
- Percutaneous coronary intervention
- Cardiac valve surgery
- Cardiac transplantation

Other patients likely to benefit:

- Heart failure
  - HFrEF
  - HFpEF
- PAD
- CVD Subclinical disease
- CVD Risk factors

Thomas et al. *Circulation.* 2010;122:1342-1350

Exercise for HF: Historical perspective

Congestion

Remodeling

Ischemia

Arrhythmia

Hemodynamic Instability

Falls

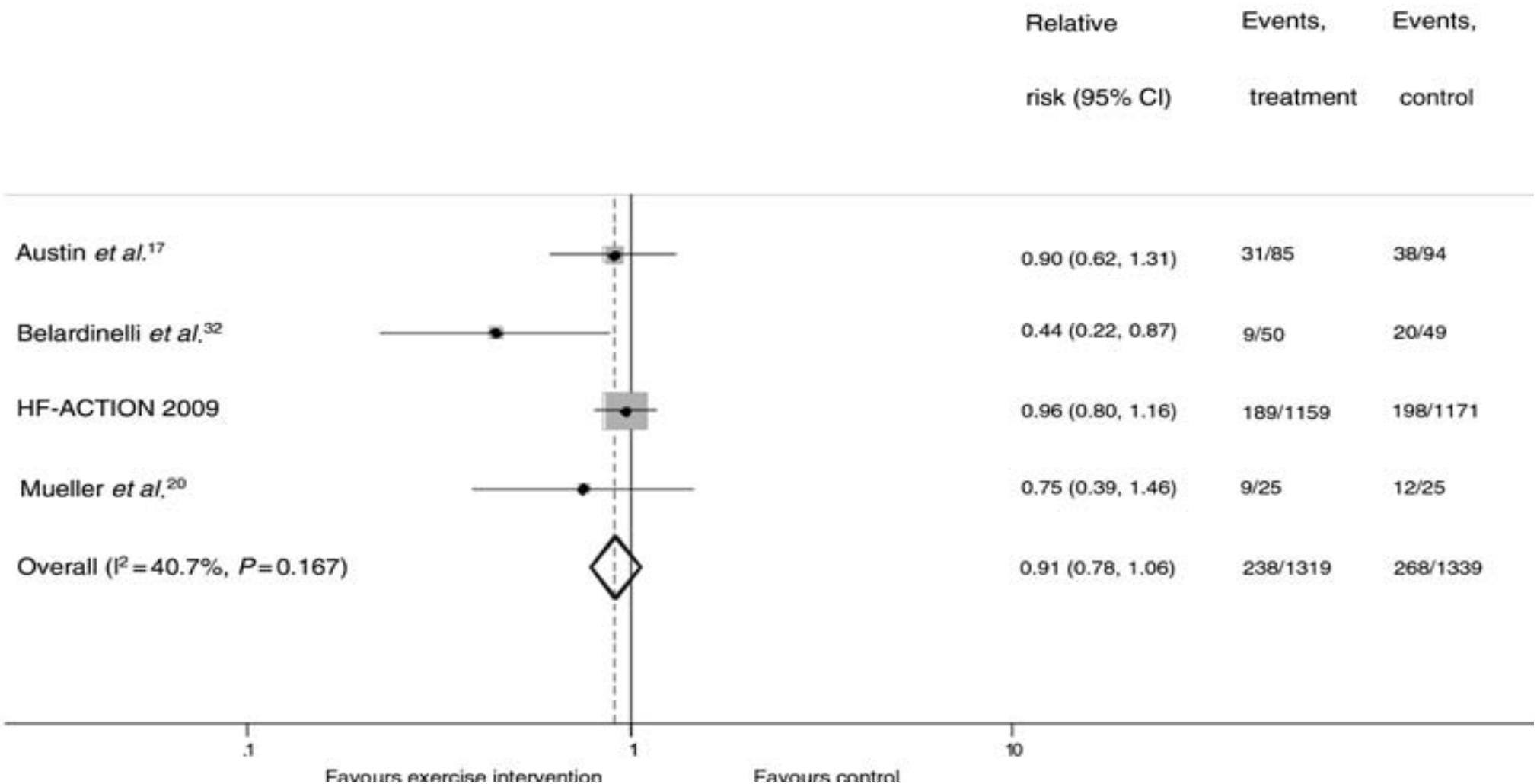
Syncope

Clinical benefits of exercise (aerobic and strength) for HF

- Heart
  - Inotropic, Lusitropic
  - Remodeling
  - Anti-arrhythmic
  - Chronotropic
- Pulmonary
  - Increased resp efficiency
- Vascular
  - Dilation
  - Distensibility
- Skeletal Muscle
  - Fiber type
  - Mitochondria
  - Oxidative capacity
  - Motor recruitment
- Neurohormonal
- Inflammatory

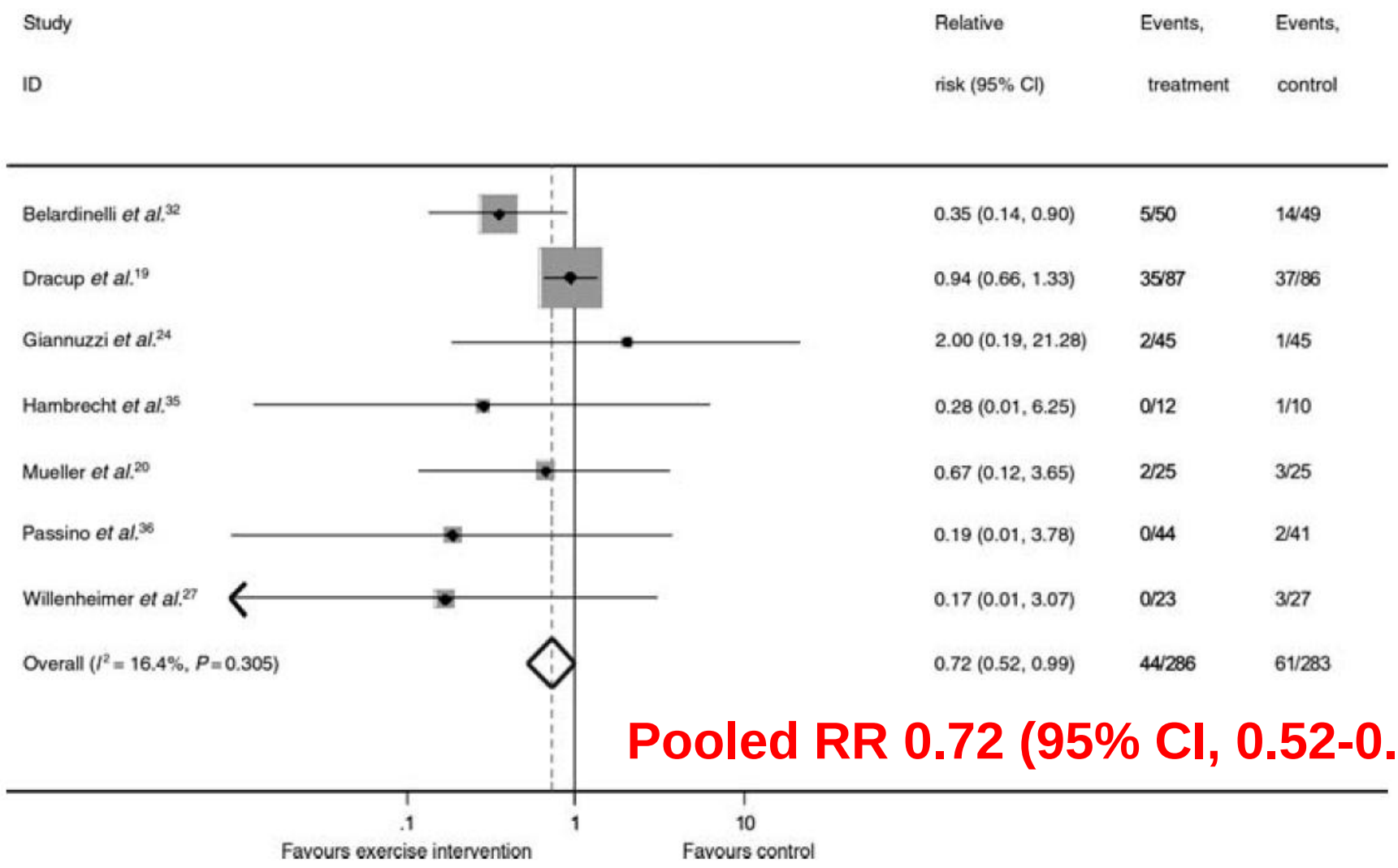
Downing, Balady. JACC 2011;58:561-9

Exercise training for HF: All-cause mortality



EJ Davies, et al. Cochrane Rev. 2011

Exercise training: 28% reduction in HF hospitalizations



Pooled RR 0.72 (95% CI, 0.52-0.99)

EJ Davies, et al. Cochrane Rev. 2011

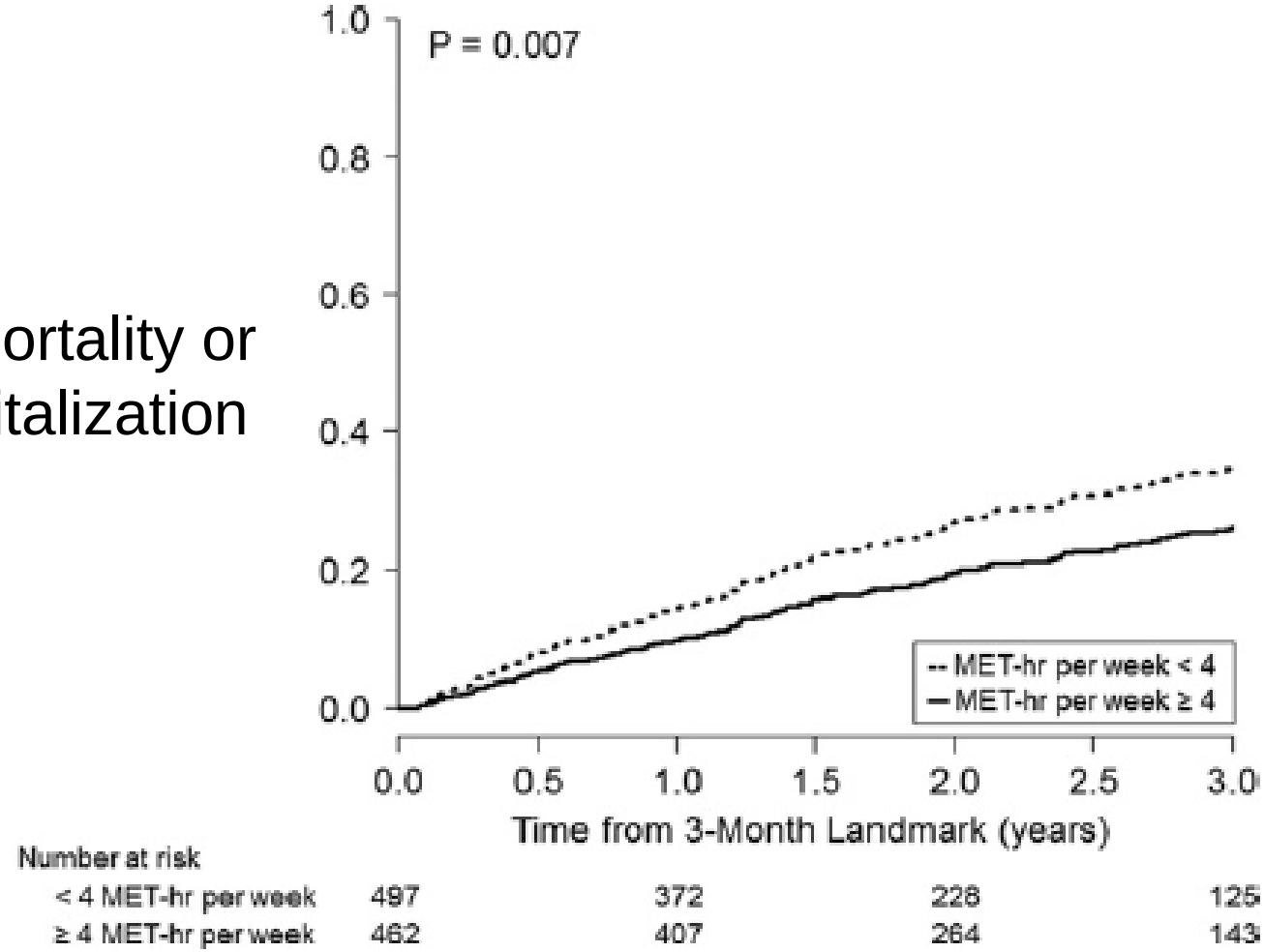
HF-ACTION

- N=2,331; 30 month mean follow-up
  - Mild ↑ peak VO_2 (4%)
- 7% ↓ all-cause mortality/hospitalization, p=0.13
  - When adjusted for CPX duration, LVEF, Depression, Afib:

    11% reduction all-cause mortality/hospitalization, p<0.03
- Only 30% of 1,159 of those in the Ex Group, met or exceeded adherence target

HF-ACTION and volume of exercise

CV mortality or hospitalization



Keteyian S, J Am Coll Cardiol 2012;60:1899–905

Efficacy and Safety of Exercise Training in Patients With Chronic Heart Failure
HF-ACTION Randomized Controlled Trial

Decreased CV mortality or HF hospitalization, JAMA 2009;301:1439-50

Effects of Exercise Training on Health Status in Patients With Chronic Heart Failure
HF-ACTION Randomized Controlled Trial

Improved quality of life, JAMA 2009;301:1451-59

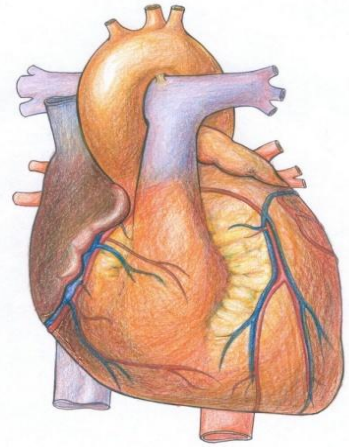
Effects of Exercise Training on Depressive Symptoms in Patients With Chronic Heart Failure
The HF-ACTION Randomized Trial

Lower depressive symptoms, JAMA 2012;308:465-74

Heart Failure Therapy

- Exercise is effective HF therapy
- Compliance is challenging
- Cardiac rehabilitation has utility in respect to its multiple components:
  a. Monitored exercise
     - Intrinsic cardiac instability
     - Clinical status (volume, hemodyamics)
     - Type of exercise
  b. Behavior modification
  c. Education
  d. Diet
     - Salt
  e. Polypharmacy, multimorbidity

Cardiac Rehab for Veterans with HF



- Updated AHA/ACC Heart Failure Guidelines - 2013
- What's happening in VHA

ACCF/AHA Practice Guideline

2013 ACCF/AHA Guideline for the Management of Heart Failure

A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

Developed in Collaboration With the American College of Chest Physicians, Heart Rhythm Society and International Society for Heart and Lung Transplantation

Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation

Yancy et al. *Circulation.* 2013;128:e240-e327

7.3.1.6. Activity, Exercise Prescription, and Cardiac Rehabilitation: Recommendations

2013 ACCF/AHA Guideline

Class I

1. **Exercise training (or regular physical activity) is recommended as safe and effective for patients with HF who are able to participate to improve functional status.[404–407] *(Level of Evidence: A)***

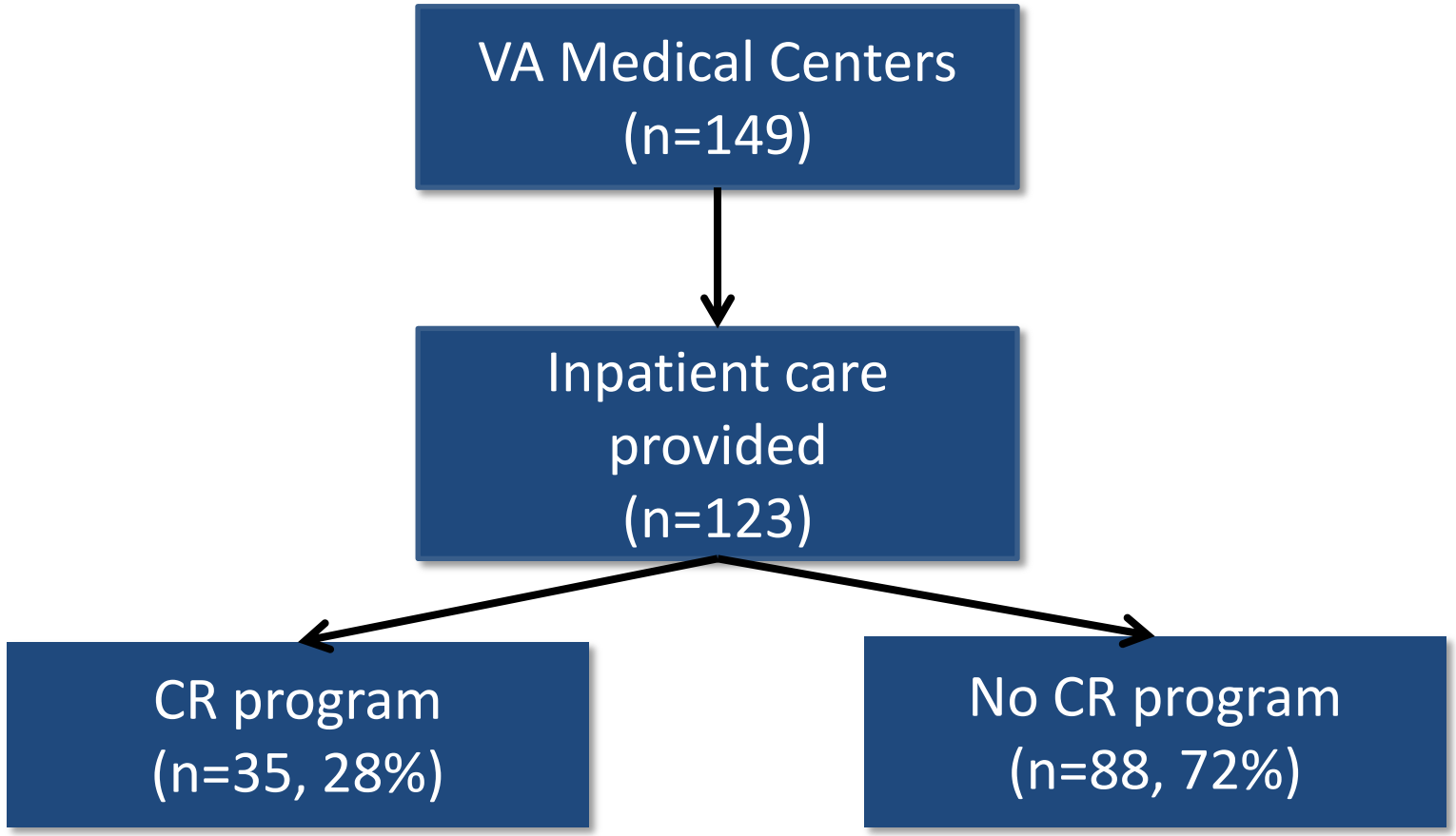
Class IIa

1. **Cardiac rehabilitation can be useful in clinically stable patients with HF to improve functional capacity, exercise duration, HRQOL, and mortality.[404,406–411] *(Level of Evidence: B)***

Current CMS National Coverage Analysis (NCA) for CR Programs - Chronic Heart Failure (CAG-00437N)

Date	Activity
Feb 2013	AACVPR, AHA, HFSA, ACC meet with CMS
Mar 2013	Formal written request submitted to CMS
Jun 2013	CMS posted intent to conduct NCA
July 2013	30-day public comment period
Dec 2013	Decision proposal anticipated
March 2014	National Coverage Determination Completion

2011 Survey of VA Cardiovascular Specialty Care Services
(Healthcare Analysis & Information Group)



Schopfer D, QUERI RRP 12-232, presented at AHA Scientific Sessions, Nov 2012

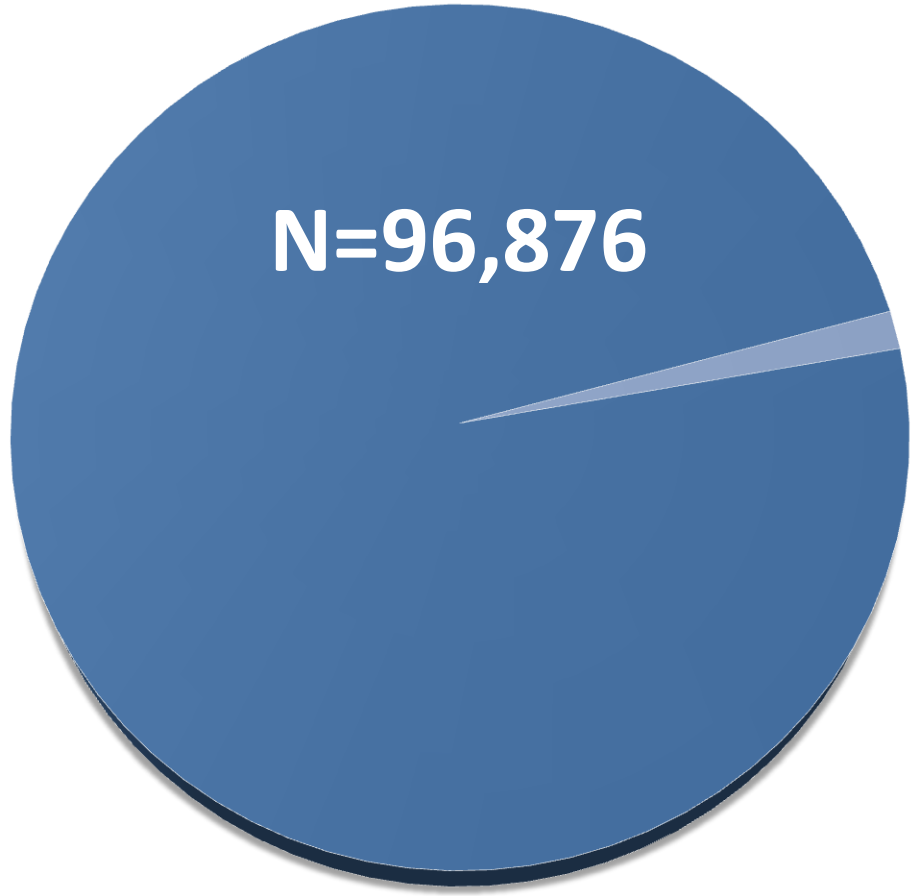
35 Cardiac Rehab Centers in VHA

Of the 9.3 million Veterans currently enrolled in VHA,
6.9 million (74%) live more than 60 minutes from a VA CR center.

35 VA Facilities with Onsite Cardiac Rehab (by VISN)

1	Boston HCS-West Roxbury
2	Syracuse, NY
2	Western New York HCS
3	New Jersey HCS-East Orange
3	New York Harbor HCS-Brooklyn
3	New York Harbor HCS-New York
3	Northport, NY
4	Wilkes-Barre, PA
5	Washington, DC
6	Richmond, VA
7	Augusta, GA
8	Bay Pines HCS
8	Caribbean HCS-San Juan
8	Miami HCS
8	Tampa, FL
8	West Palm Beach, FL
9	Louisville, KY
10	Cleveland, OH-Wade Park
10	Dayton, OH
11	Ann Arbor HCS
12	Hines, IL
12	Madison, WI
12	Milwaukee, WI
15	Columbia, MO
16	Houston, TX
16	Oklahoma City, OK
17	North Texas HCS
18	Phoenix, AZ
19	Montana HCS
19	Salt Lake City HCS
20	Puget Sound HCS-Seattle
22	Greater Los Angeles HCS
22	Long Beach HCS
23	Black Hills HCS-Fort Meade
23	Black Hills HCS-Hot Springs

- Veterans Hospitalized for Heart Failure, FY 2006-2012
- Participated in Cardiac Rehabilitation Program (1.4%)



Suaya et al. *Circulation.* 2007;116:1653-62

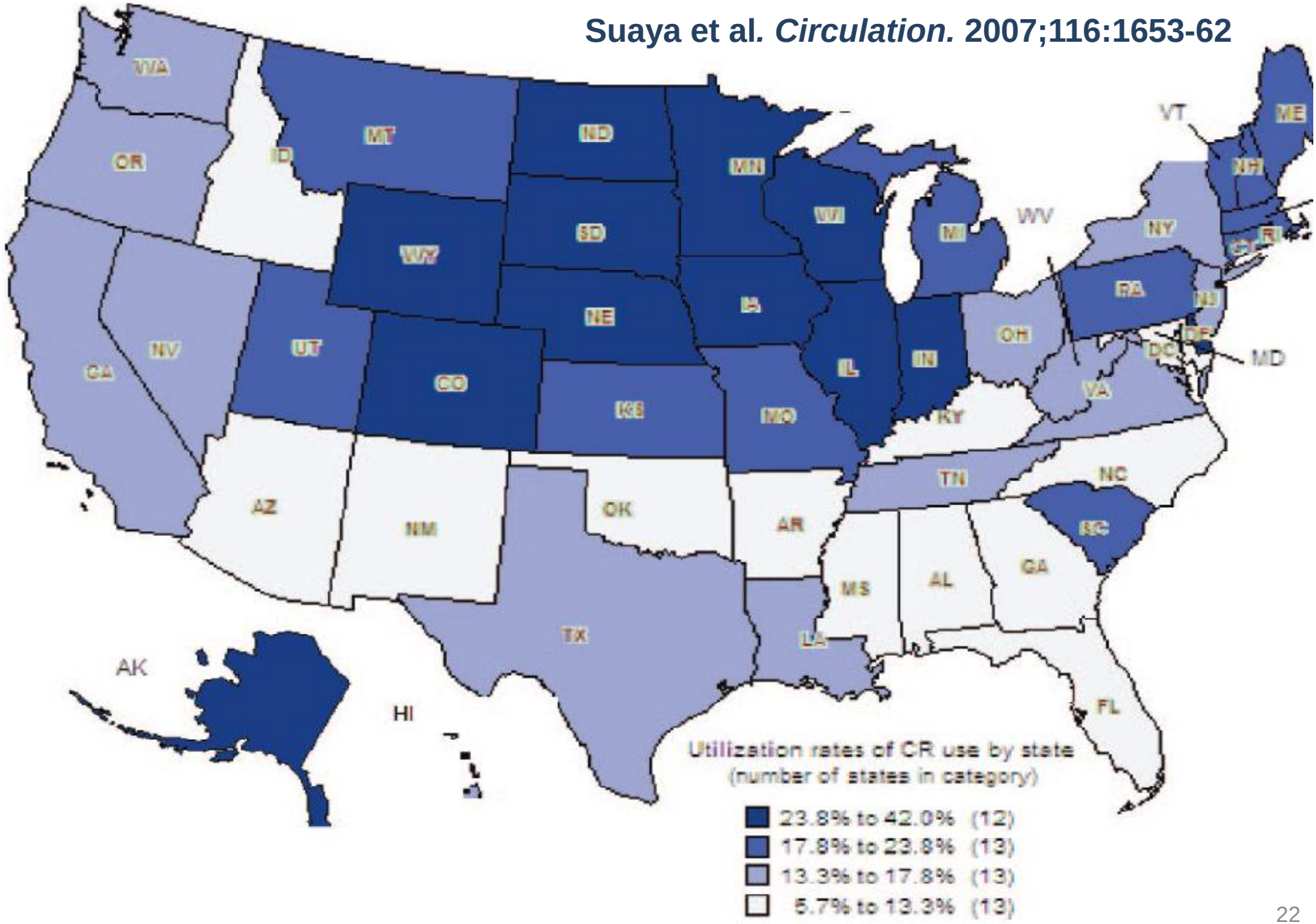


Figure. Standardized rates of CR by state.

AHA Presidential Advisory

Referral, Enrollment, and Delivery of Cardiac Rehabilitation/Secondary Prevention Programs at Clinical Centers and Beyond

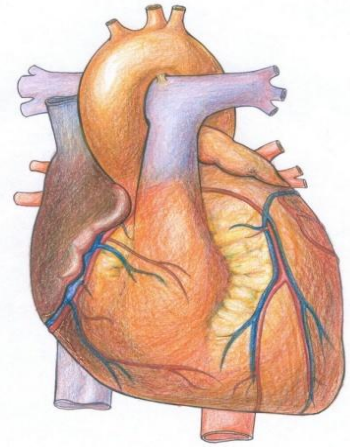
A Presidential Advisory From the American Heart Association

Gary J. Balady, MD, FAHA, Chair; Philip A. Ades, MD; Vera A. Bittner, MD, FAHA; Barry A. Franklin, PhD, FAHA; Neil F. Gordon, MD, PhD, MPH; Randal J. Thomas, MD, FAHA; Gordon F. Tomaselli, MD, FAHA; Clyde W. Yancy, MD, MSc, FAHA

The remarkably wide treatment gap between scientific evidence of the benefits of cardiac rehabilitation and clinical implementation of rehabilitation programs is unacceptable.

Circulation. 2011;124:2951-2960

Conclusions



- Exercise training improves mortality and quality of life in patients with HF
- New HF guidelines recommend CR for HF
- CR vastly underutilized both inside and outside VHA
- Implementing home CR may improve utilization