Cardiac Rehabilitation Should be Paid in Korea?

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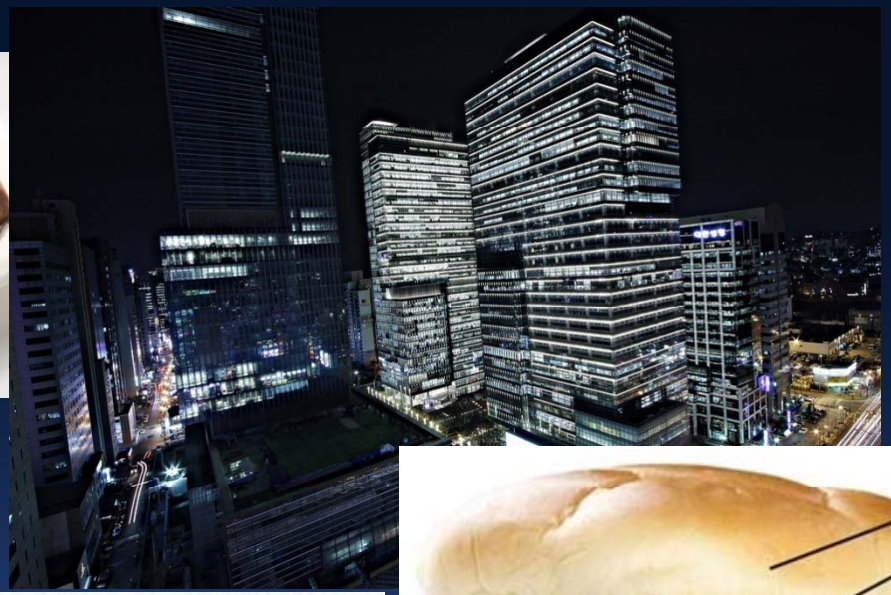
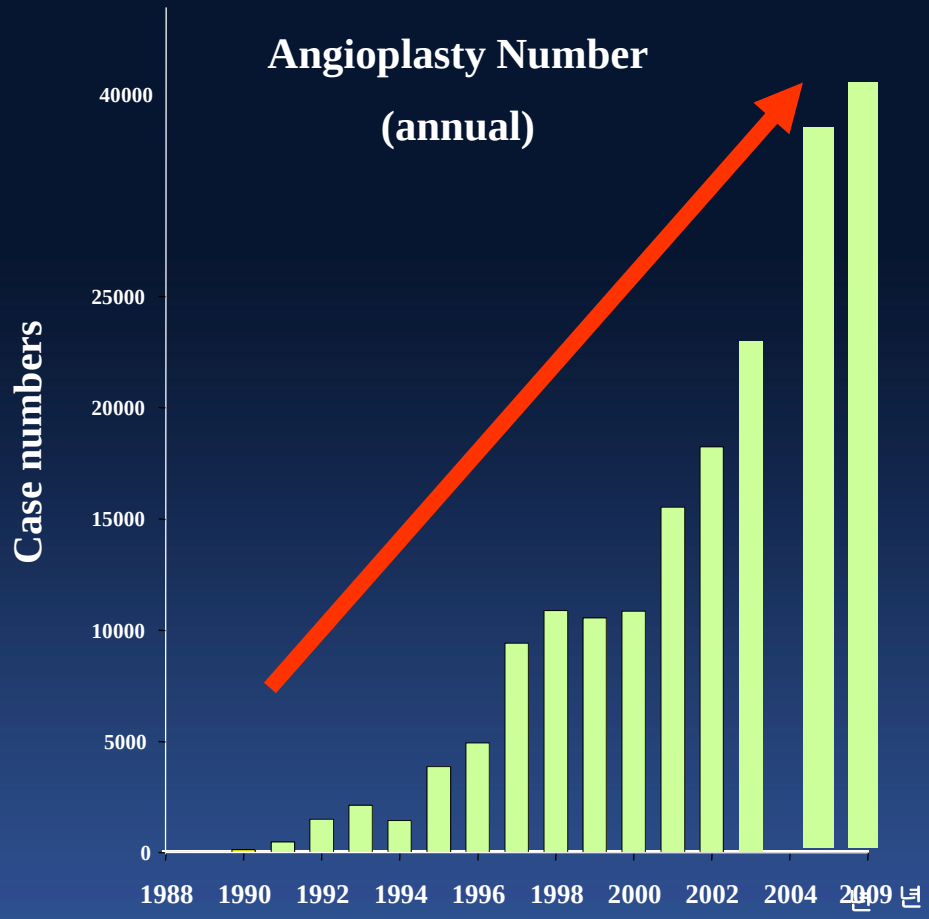
NO CONFLICT OF INTEREST TO DECLARE

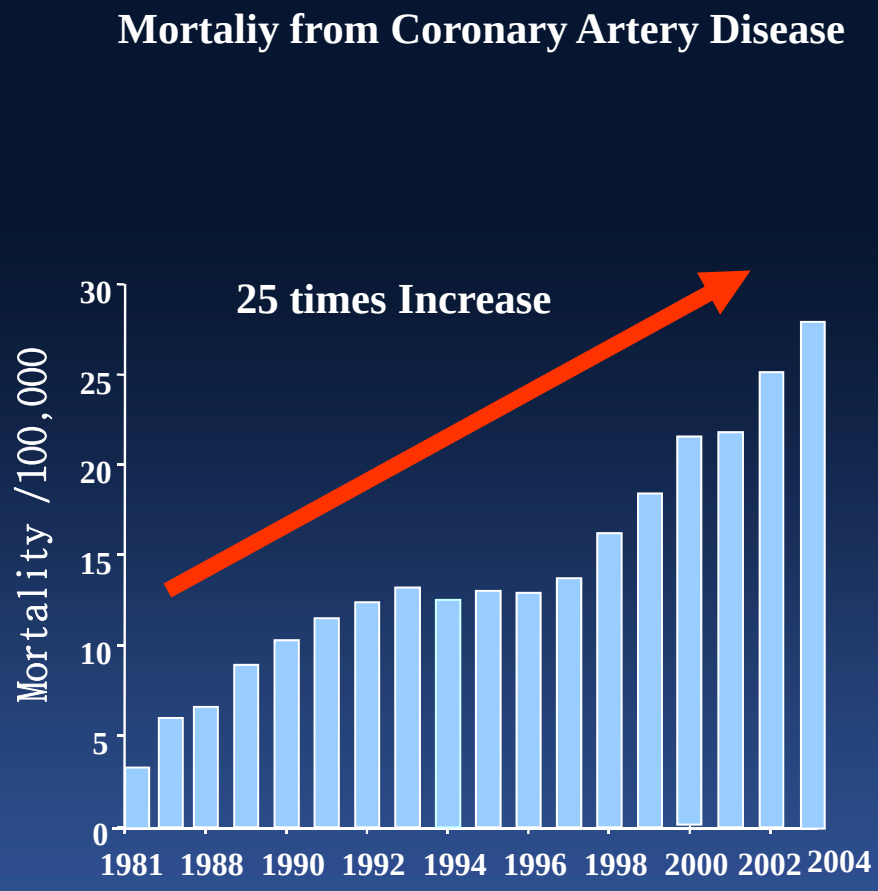
Before & After

Before & After



Before & After, in Korea





Rapid expansion of Coronary Artery Disease

3rd Cause of Overall Mortality

1.Malignancy

2.Cerebro-vascular Disease

3.Cardiac Disease

: 80~90 % Coronary Artery Disease

STATE-OF-THE-ART PAPER

Percutaneous Coronary Intervention for Stable Coronary Artery Disease

Demosthenes G. Katritsis, MD, PHD,* Bernhard Meier, MD†

Athens, Greece; and Bern, Switzerland

Patients with significant coronary stenoses are at increased risk of future cardiac events.

However, in the absence of acute coronary syndrome or recent MI and residual ischemia, elective PCI has not been shown to improve prognosis.

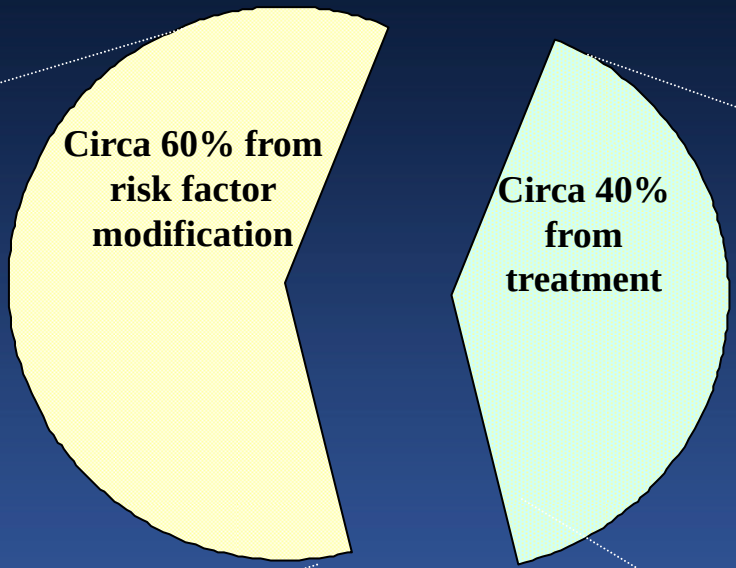
J Am Col Cardiology. 2008; 52: 889-893

Explaining Mortality Reduction 1980-2000

48% of CVD mortality reduction since 1980 has come from reductions in smoking.

32% of reduction comes from secondary prevention and other primary prevention.

Informed assessment from analysis of english language literature in England, US,and Europe



Smoking reduced	48%
Blood pressure lowered	9.5%
Fat reduced	9.5%
Reduced deprivation	3%
Increased risk of obesity/physical inactivity	-12.%

11%	Secondary prevention
8%	Thrombolysis & other AMI
5%	Surgery or drugs for angina
3%	Treatment for hypertension
13%	Other

Primary sources Belgin et al [2004], Capewell et al [1999] , McPherson [2001]

Contemporary Clinical Management

- Early diagnosis and rapid revascularization of myocardial infarction and unstable angina
- Ischemia producing lesion-only intervention (FFR)
- Shortened hospitalizations for CABG patients
- Early mobilization and discharge for most coronary patients
- Minimal loss of physical conditioning

The Modern Paradigm in Coronary Disease Management

- Reduce Risk
  - Aggressive Lipid Management
  - Smoking Cessation and Abstinence
  - Hypertension Control
  - Diabetic Control
  - Ideal Body Weight
- Restore Confidence
  - Physical Capability
  - Occupational Capacity
  - Sexual Activity
- Increase Knowledge for Self-Care

Cardiac Rehabilitation

Best "Medicine" for your patients with Coronary Artery Disease

Why you should write the "Prescription" **TODAY!**

What ?

- Medically supervised program
  designed to,

1. optimize a cardiac patient's physical, psychological, and social functioning

2. stabilizing, slowing, or even reversing the progression of the underlying atherosclerotic processes

3. reducing death and disability

Goals for Rehabilitation

Focus on 4 aspects of activities of daily living:

1) Somatic goals
– Teaching individuals to learn one's optimal exercise limits

2) Social goals
– Helping individuals to reintegrate into family life with optimal reintegration regarding working, household, hobbies and leisure activities

Goals for Rehabilitation

3). Psychosocial goals
– empowering individuals by evaluating anxiety levels and concerns towards cardiac exertion during exercise, that may lead to negative emotions.

4). Secondary prevention goals
– helping individuals to modify risk behavior & reinforce compliance to therapy regimen.

Who should be involved?

Physiotherapy

Social Services

Exercise instructor

GP

District Nurses

Consultant

Secondary care

Psychologist

Patient

Dietician

Practice nurses

Smoking cessation advisor

Nurse

Pharmacist

Health Visitor

For whom ?

ALL suitable CHD patient.

Exertional / Stable angina

ACS (UA, STEMI or NSTEMI following medical or surgical management.)

Before and After revascularisation.

Following valve surgery or ICD insertion

Stable heart failure and cardiomyopathy

Congenital heart disease

Peripheral vascular disease

Cost-effectiveness/ Cost-efficiency

- Medicare payments in hospital for CVD in 1997 was $26.9 billion!
- Studies, adjusted for quality of life, show savings of $4,950-$9,200 per year of life saved.
- Reduction in re-hospitalizations and medical costs are well documented.

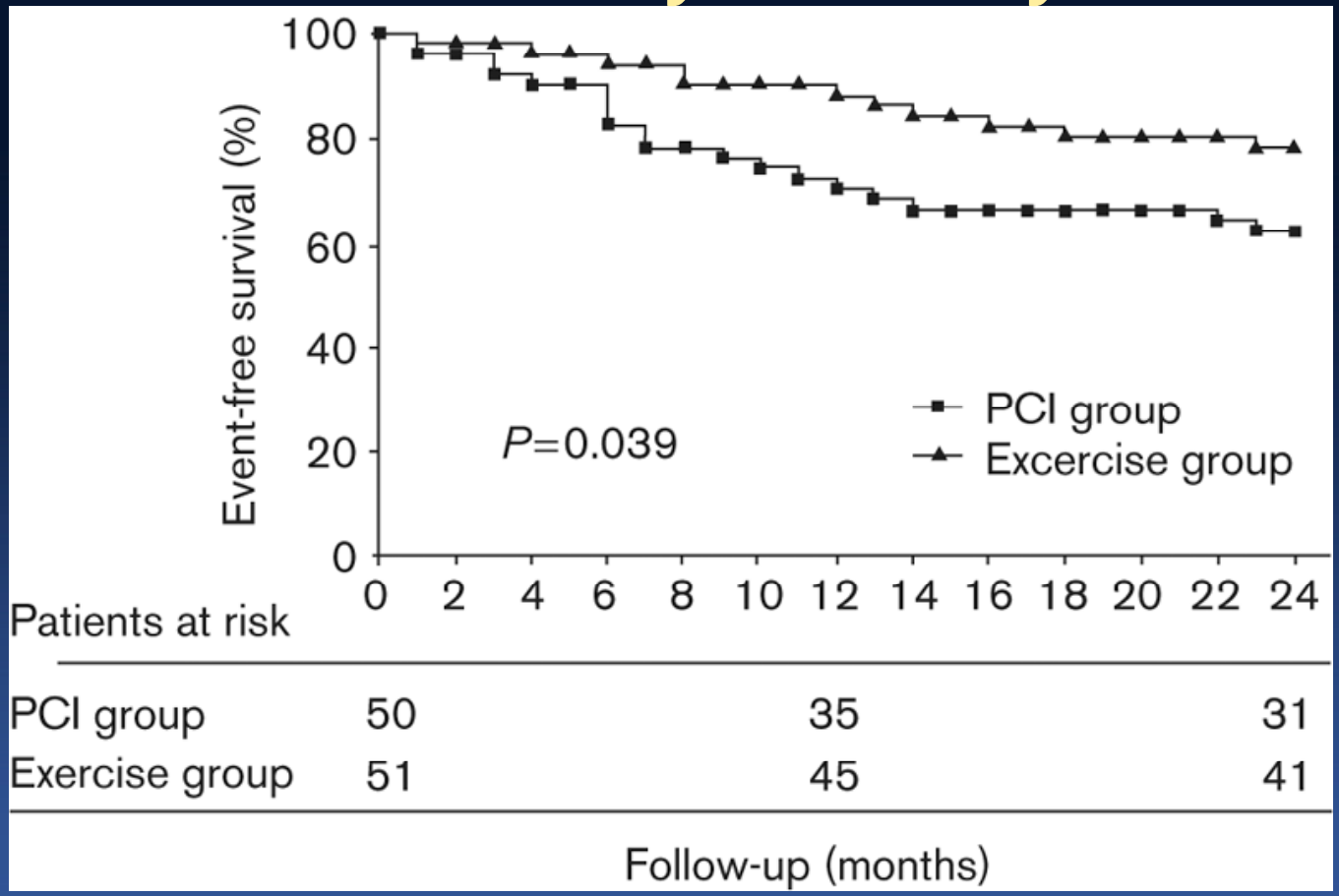
Why ?

- Evidence of benefits

- Reduced symptoms (angina, dyspnea, fatigue)
- Mortality benefit (approximately 20 to 25%)
- Reduction in nonfatal recurrent myocardial infarction over median follow-up of 12 months
- Increased exercise performance
- Improved lipid panel (total cholesterol, HDL [good cholesterol], LDL [bad cholesterol], and triglycerides)
- Increased knowledge about cardiac disease and its management
- Enhanced ability to perform activities of daily living
- Improved health-related quality of life
- Improved psychosocial symptoms (reversal of anxiety and depression, increased self-efficacy)
- Reduced hospitalizations and use of medical resources
- Return to work or leisure activities

Exercise vs. PCI groups

Stable Coronary Artery Disease



Hambrecht et al. Circulation 2004;109:1371-1378

Walther et.al. Eur J Cardiovasc Prev Rehabil. 2008; 15: 107-112

Reviews of Exercise Based Rehabilitation

	Reviews	No. of RCTs	No. of Patients	Meta-analysis	Relative Reduction in Total Mortality
Exercise or Exercise plus CR	Oldridge 1988	10	4347	Yes	**24%** (8 to 37%)
	O'Connor 1989	9	4554	Yes	**20%** (4 to 34%)
	Bobbio 1989	8	2260	Yes	**32%** (14 to 47%)

Cochrane Review: Joliffe et al. 2000

8440 patients after MI or Revascularisation

Exercise only: **27%** fall in all cause mortality; **31%** fall in cardiac mortality

Exercise + : **13%** fall in all cause mortality; **26%** fall in cardiac mortality

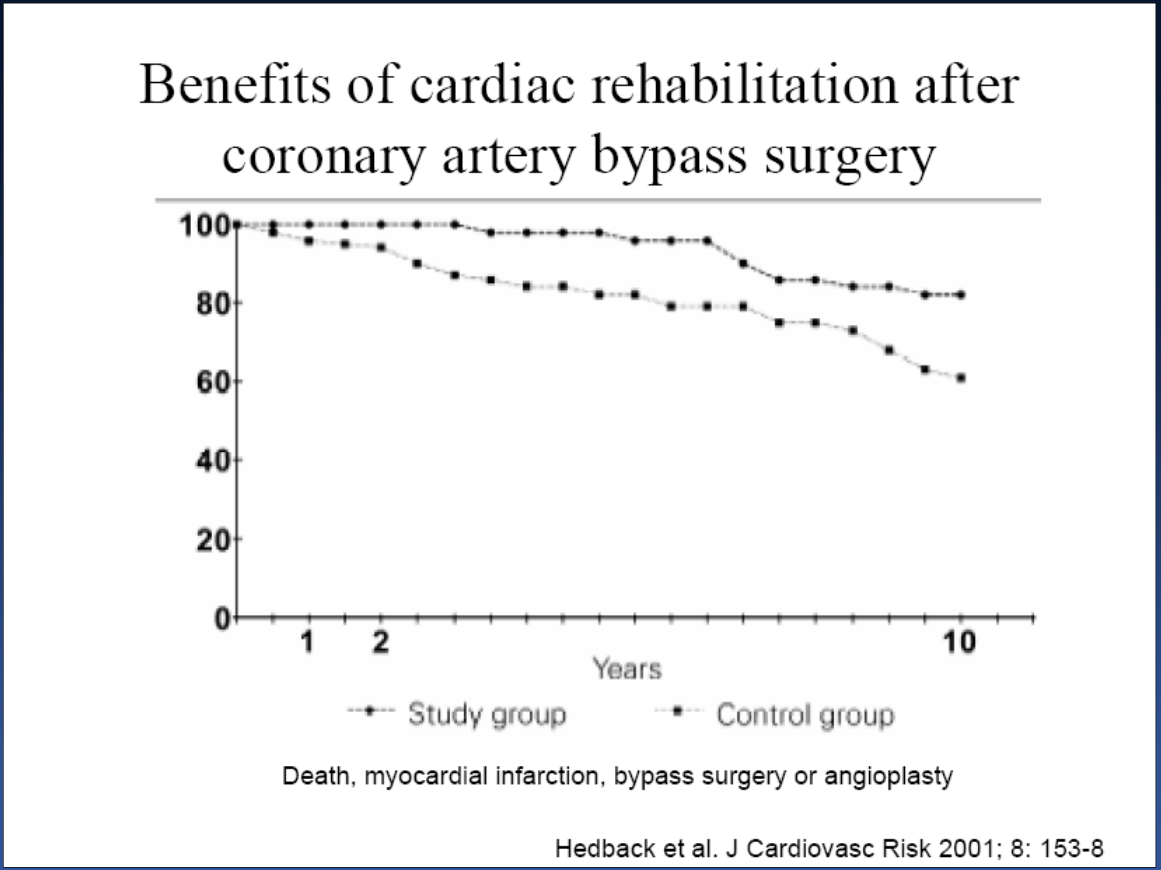
Cardiac Rehabilitation - after PCI

- 2008
  - 213 patients post PCI
  - Non-randomised: 133 received CR, 80 no CR
  - Mean follow-up 4.5 year

  - Results:
    - Readmission for CAD event
      : 45% CR vs. 75% no CR
    - Revascularization : 7% CR vs 17% no CR
    - Total health care cost: 4862 Eu/pt vs 5498 Eu/pt
    - MACE 24% CR vs. 42% no CR

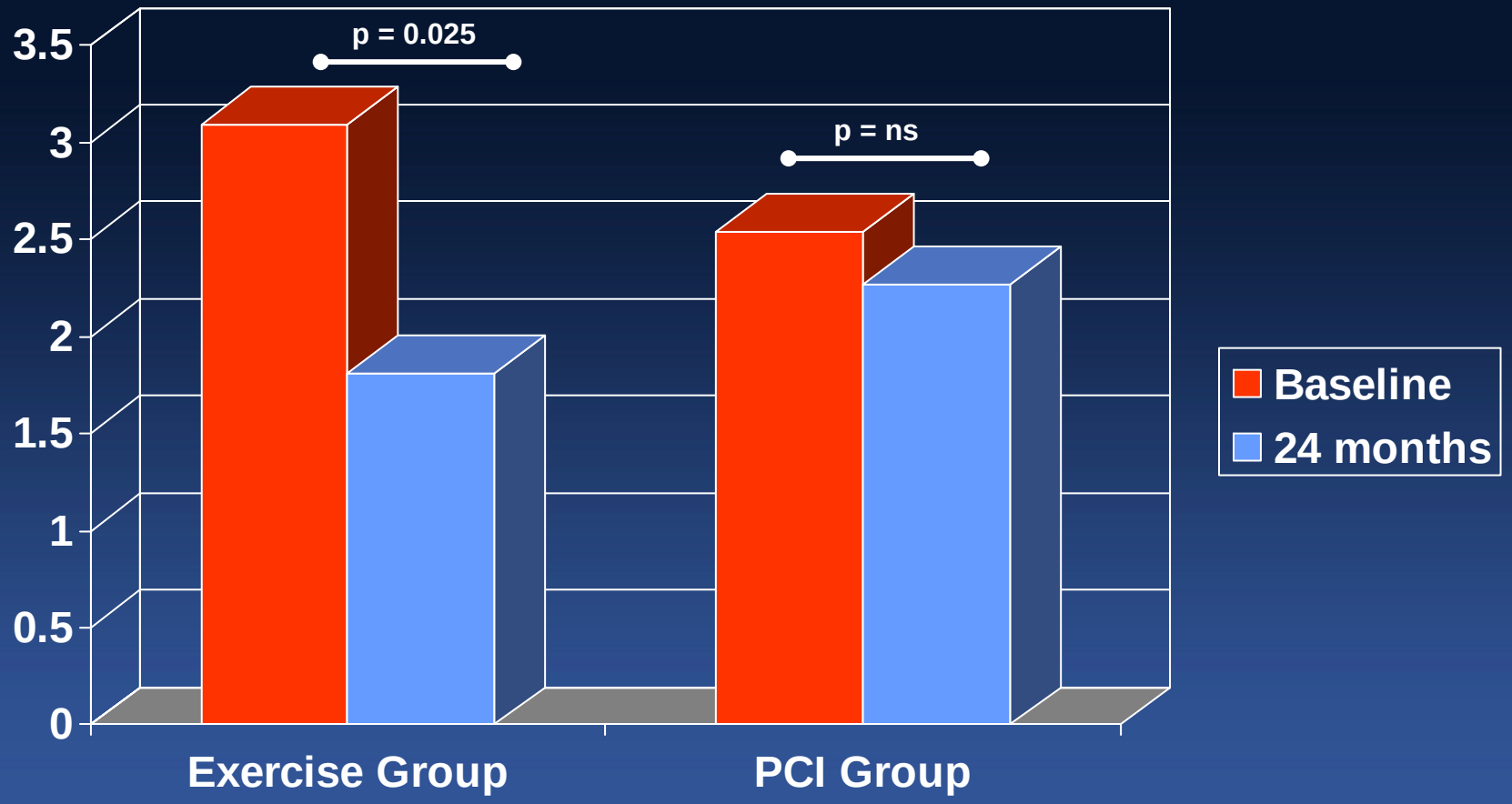
Dendale P. et.al. Acta Cardiol 2008

Cardiac Rehabilitation (CR) - after CABG



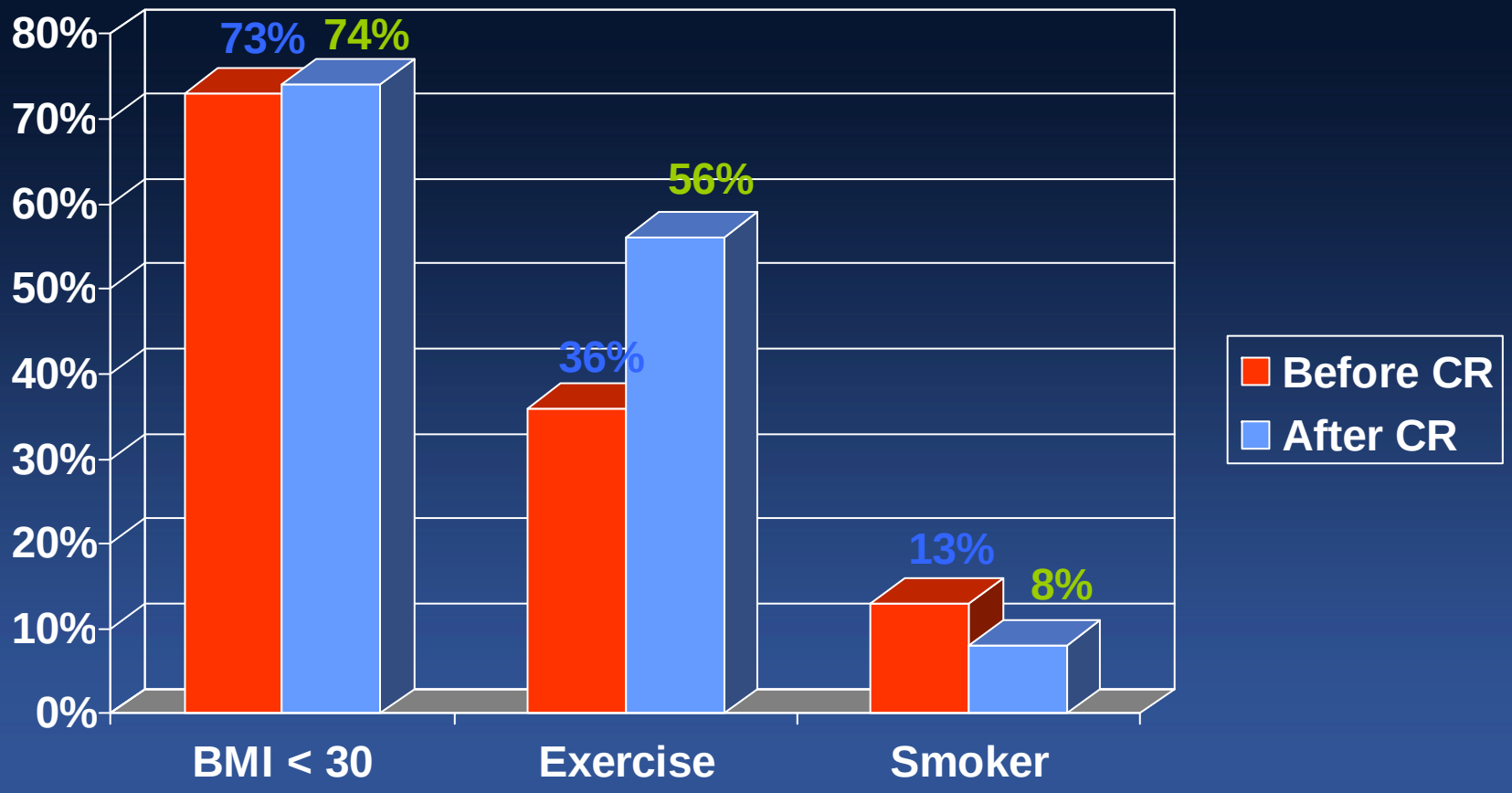
Hedback et al. J Cardiovasc Risk 2001;8:153-8

hsCRP levels



Walther et.al. Eur J Cardiovasc Prev Rehabil. 2008; 15: 107-112

NACR Annual Statistical Report: 2008
12 month outcome



Depression

- Depression is **the most proven psychosocial risk factor and consequence of heart disease.**

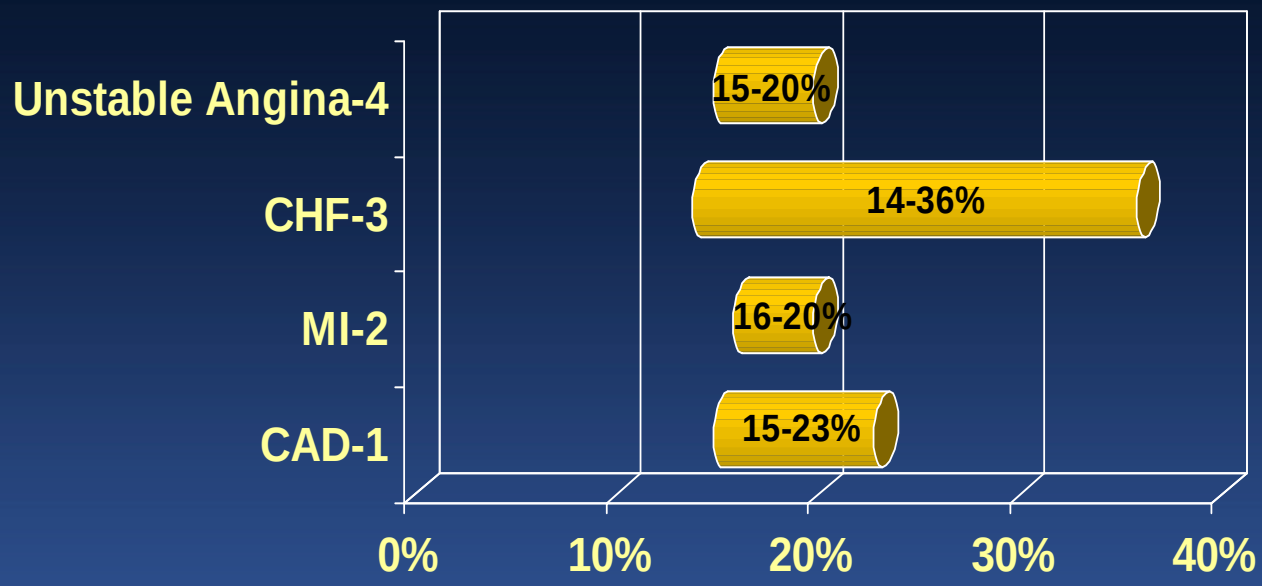
- Estimates of depression range from **15-65%** in cardiac patients.

  14-47% - depressive symptoms

  15-20% - DSM criteria

- Some depression may be expected
  - Guilt over lifestyle contributions
  - Difficulty adjusting to physical limitations

Prevalence Rates of Major Depression in Patients with Cardiovascular Illness



1-Carney. 1995; Hance, 1996; Gonzalez, 1996; Sullivan, 1999; Connerney, 2001; **2**-Schleifer, 1989; Ladwig, 1991; Frasure-Smith, 1995; Jiang, 2001; **3**-Jiang, 2001; Koenig, 1998; Frasure-Smith, 1993; **4**-Lesperance, 2000

Depression & Future Cardiac Problems

- Negative mood and depression **significantly predicted cardiac-related deaths** independent of the severity of heart disease.[1]

- Depression after an acute MI was found to be a **significant predictor of further cardiac events** one year later, especially for elderly patients. [2]

- In patients six months after a heart attack, depression was **associated with more than a 400% increase in the risk of cardiac related death after adjusting for other risk factors**, such as left ventricular dysfunction and previous heart attacks. [3]

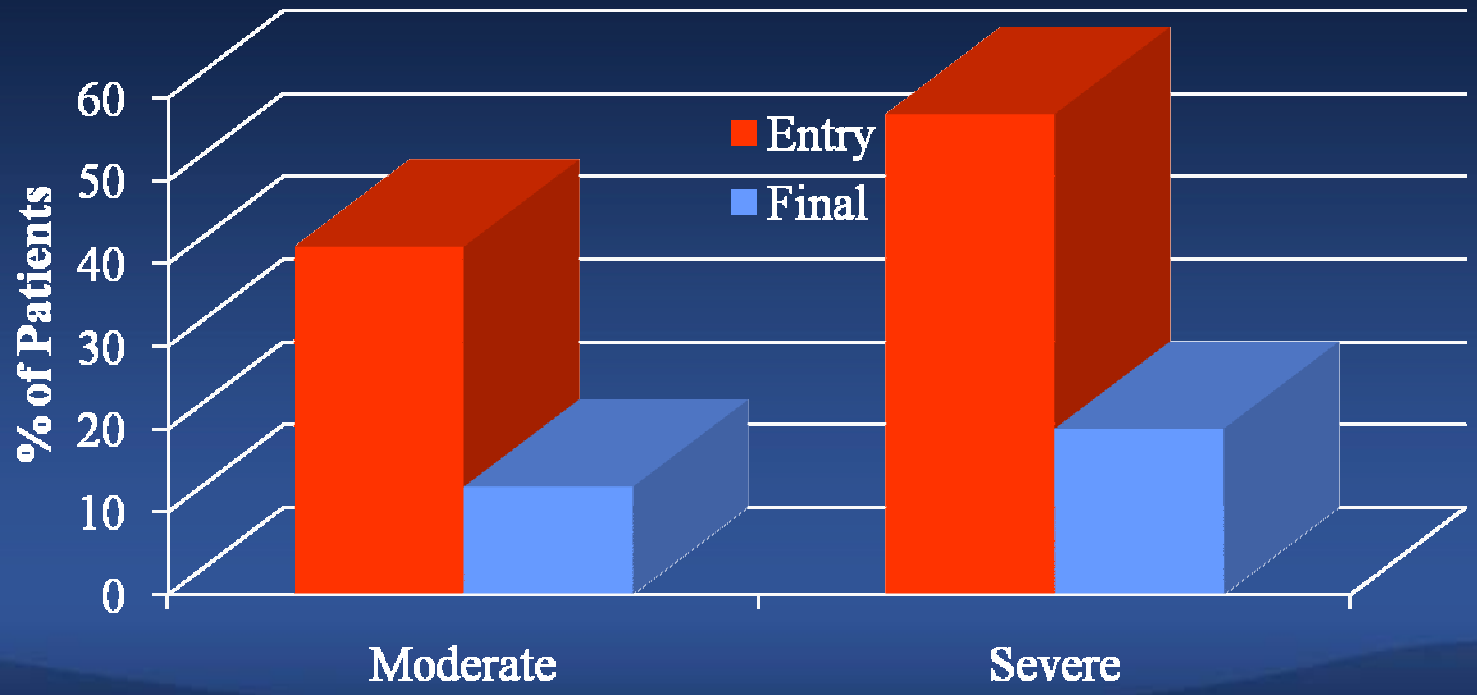
1) Frasure Smith and Lesparance 2003, *Archives of General Psychiatry*, 60: 627-36. 2) Shiotani et al. 2002, *Journal of Cardiovascular Risk*, 9: 153-60. 3) Frasure-Smith et al. 1993, *JAMA*, 270: 1819-1825.

Cardiac Rehabilitation Improves Depression

n=338; Prevalence of depression: 20% (n = 69);

Phase II Rehab: 12 weeks, 36 sessions

Change in Depression by Initial Severity

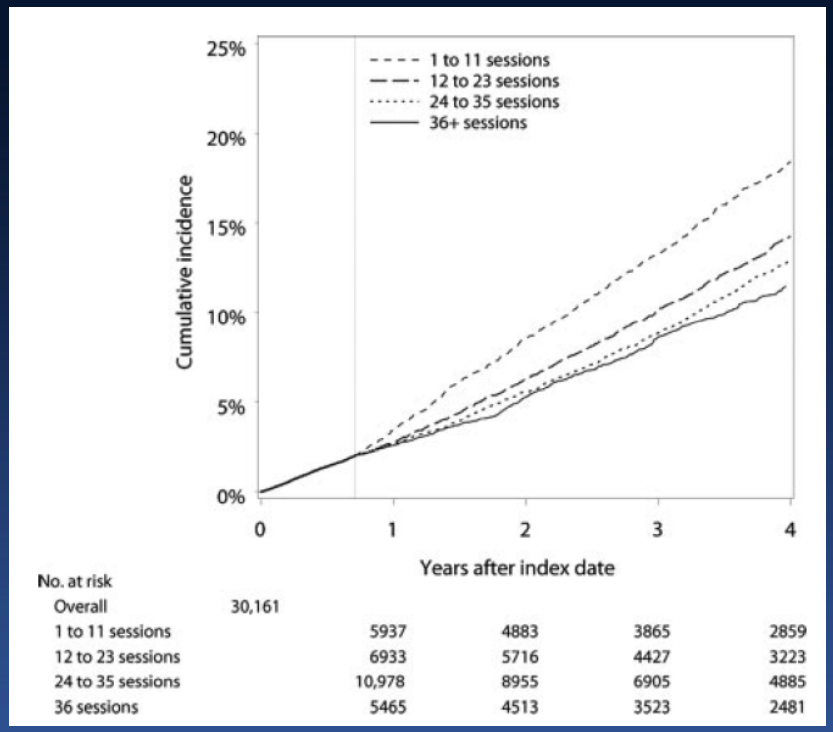


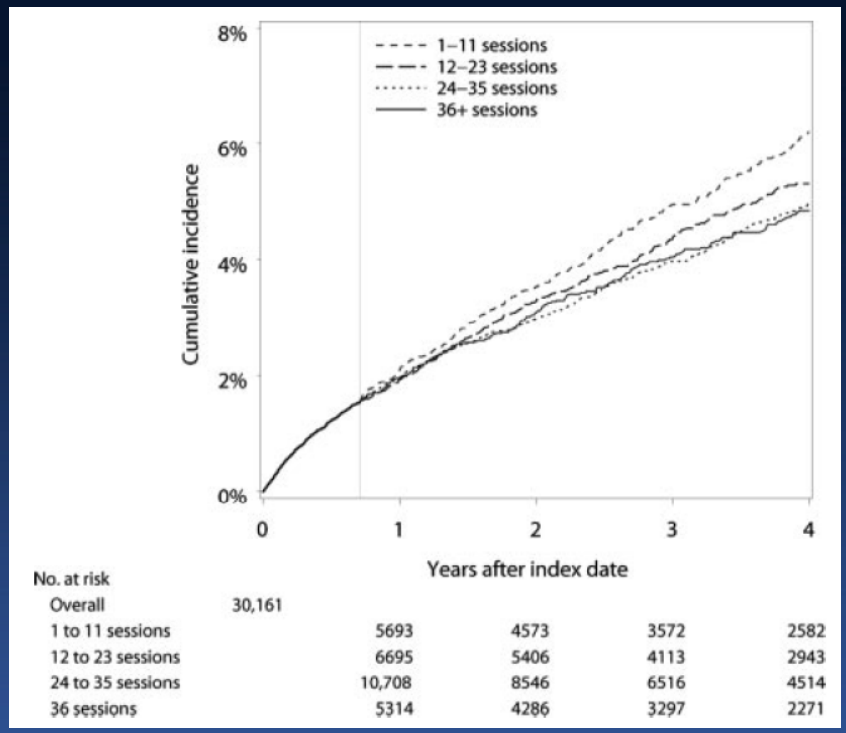
CardioVascular Research Foundation

Milani RV, et al. Am Heart J 1996;132:726-732

“Optimal dose” Cardiac rehabilitation

Death **30,161 patients** MI





Number of cardiac rehabilitation !!

Circulation. 2010;121:63-70

The ACC/AHA Guideline

- **STEMI : Class IC**
  - **New ACC/AHA Guidelines for the Management of Patients with STEMI: 2004**
- **Acute Coronary Syndrome : CLASS IB**
  - **ACC/AHA 2007 Guidelines for the Management of Patients With Unstable Angina/Non–ST-Elevation Myocardial Infarction**
- **Stable angina : Class IB**
  - **ACC/AHA 2002 Guideline Update for the Management of Patients With Chronic Stable Angina**
- **CABG or PCI : Class IB**
  - **ACC/AHA Coronary Artery Bypass Graft Surgery (CABG): Guideline Update for Date: 2004**

Standard Interventions

Cardiac rehab staff will meet patient prior to discharge from hospital and address the rehabilitation program protocol.

In accordance with the American College of Sports Medicine guidelines for exercise prescription for rehabilitation ; rehabilitation consists of 40 exercise sessions;

24 sessions (#3 per week) endurance training on a cycle ergometer (with 5 minute warm up) 20 min training with constant workload, 5 minute cool down, and 5 min post exercise monitoring. In addition 16, (2/per week) 1 hour sessions of stretching and flexibility exercises.

PCI or CABG without comprehensive risk factor modifications is a sub-optimal therapeutic strategy

Barriers to Rehabilitation

- Lack of Knowledge
- Poor Motivation
- Insufficient understanding
- Lower perceived self-efficacy
- Forgetfulness
- Decrease support from family and other care givers
- ***Cost***
- Poor Patient referral by doctors
- Time conflict between work and rehabilitation program.

Current status

- **In the United States of America**

Reimbursement
: Medicare and most private insurance

AACVPR (American Association of Cardiovascular and Pulmonary Rehabilitation)
: from 1985

Current status

Cardiac Rehab

Only 15-25% of eligible patients participate!

Am Heart J 2006; 152:835-841

Current Practice

- Treated disease very well using PCI or CABG
- But, don't care patients and the modifiable risk factors

We have focused on only disease,
But patients wants individualized manage.

The era of ***Quantity*** is going,
The era of ***Quality*** is coming……

Current Practice

- Cardiac Rehabilitation in **Korea**

1. Not covered government-initiated insurance or private insurance, just from the patient's pocket

2. Increasing interest among physicians, but still low insight " why ?"

3. No leading group and hegemony argument

4. Asan medical center is waiting the certification of AACVPR firstly in Korea using multidisciplinary CR program
5. Korea (KACVPR.com)

We must prepare for the "The new wave" in Korea

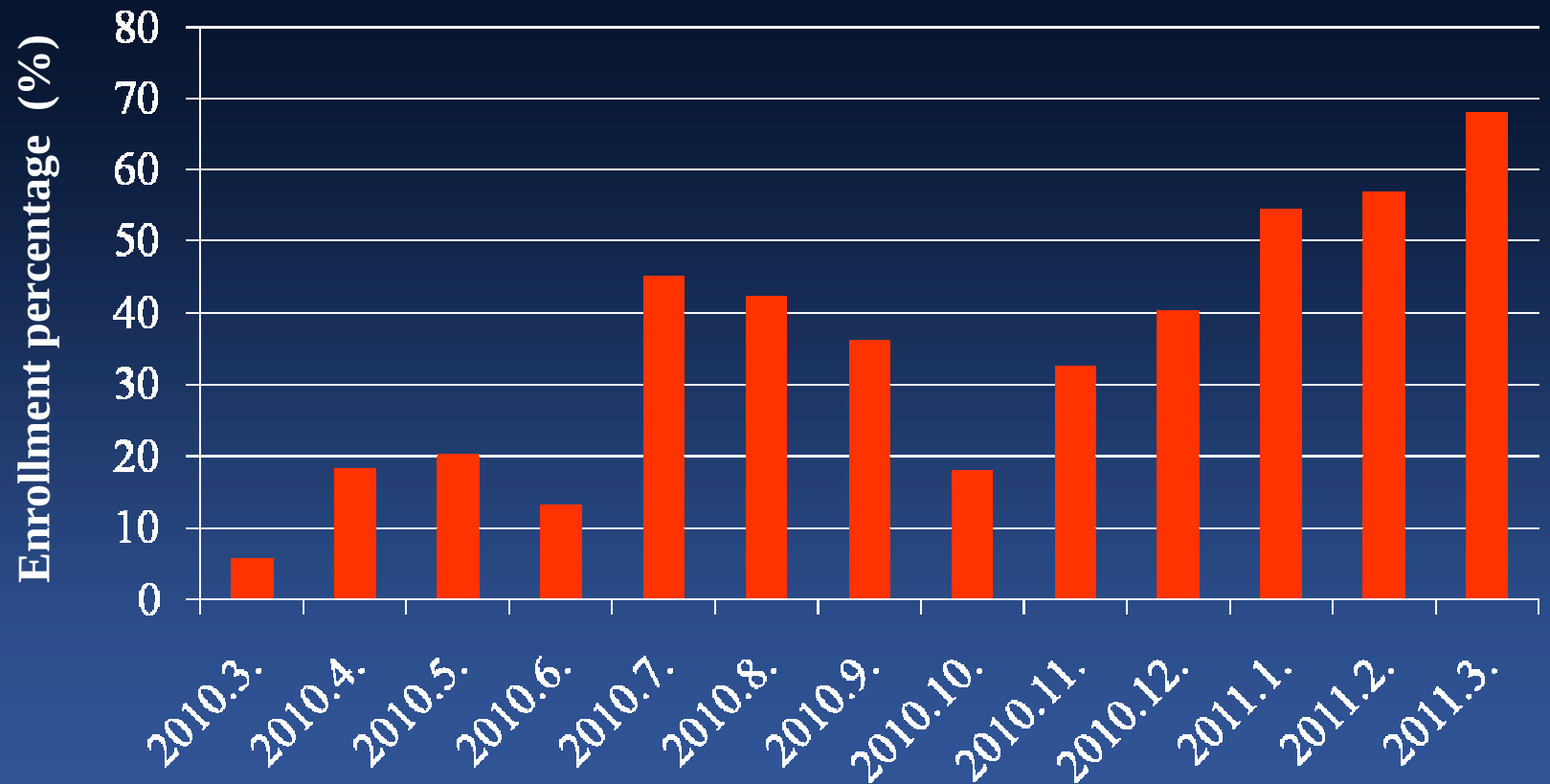
Program

System & Facility

Feasibility (Payment)

Physician

Asan Medical Center
Cardiac Rehabilitation Program



We must overcome the several barriers

Not just only me and our colleagues, also with the government and administration

Payment -The First Impediment

- Medicare Reimbursement
  - $30 - $40 per patient per session
  - $1000 - $1400 for complete program
- Private Insurance
  - $80 - $100 per patient per session
  - $2800 - $3600 for complete program
- Medicare Supplements
  - Intermediate payment to bring total program reimbursement closer to private insurance level

Payment -The First Impediment

In Korea,

Now - 임의 비급여

Tomorrow - 법정 비급여

The day after tomorrow - 보험 급여

System – Another Impediment

Standard Model for Korea

Model
Doctor
Faculty
Intensity
Prognosis

With our efforts,
Back-up support from government
: really necessary

Thank you for your attention !