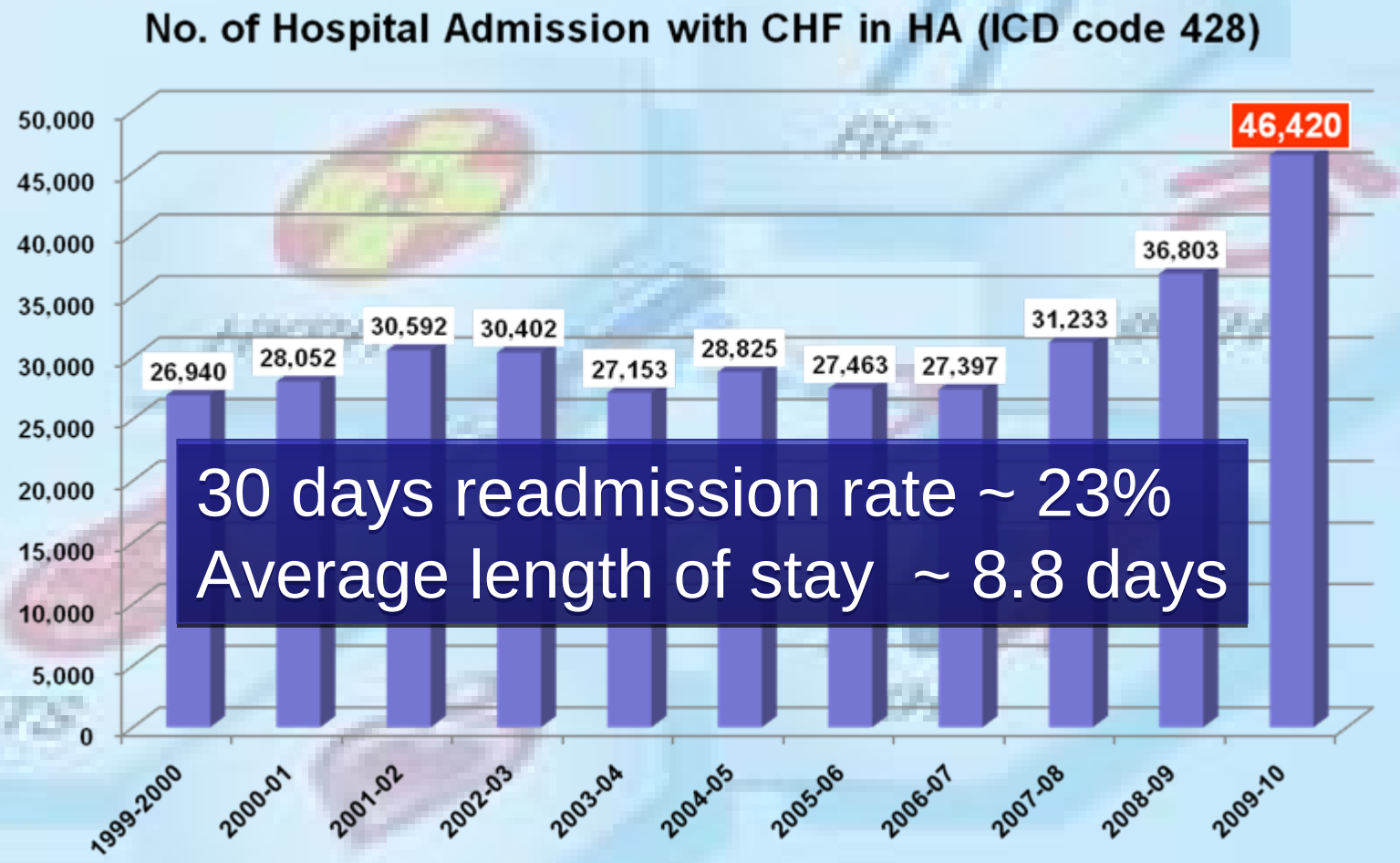
Revitalize Our Chronic Heart Failure Patients A Multidisciplinary Approach

Yu DTW[1], Lau PMY[1], Lee KYM[2], Chiang SCS[2], Ling AWM[1], Leung WWC[1], Chan MC[2]

[1]Physiotherapy Department, QEH
[2]Department of Medicine, QEH

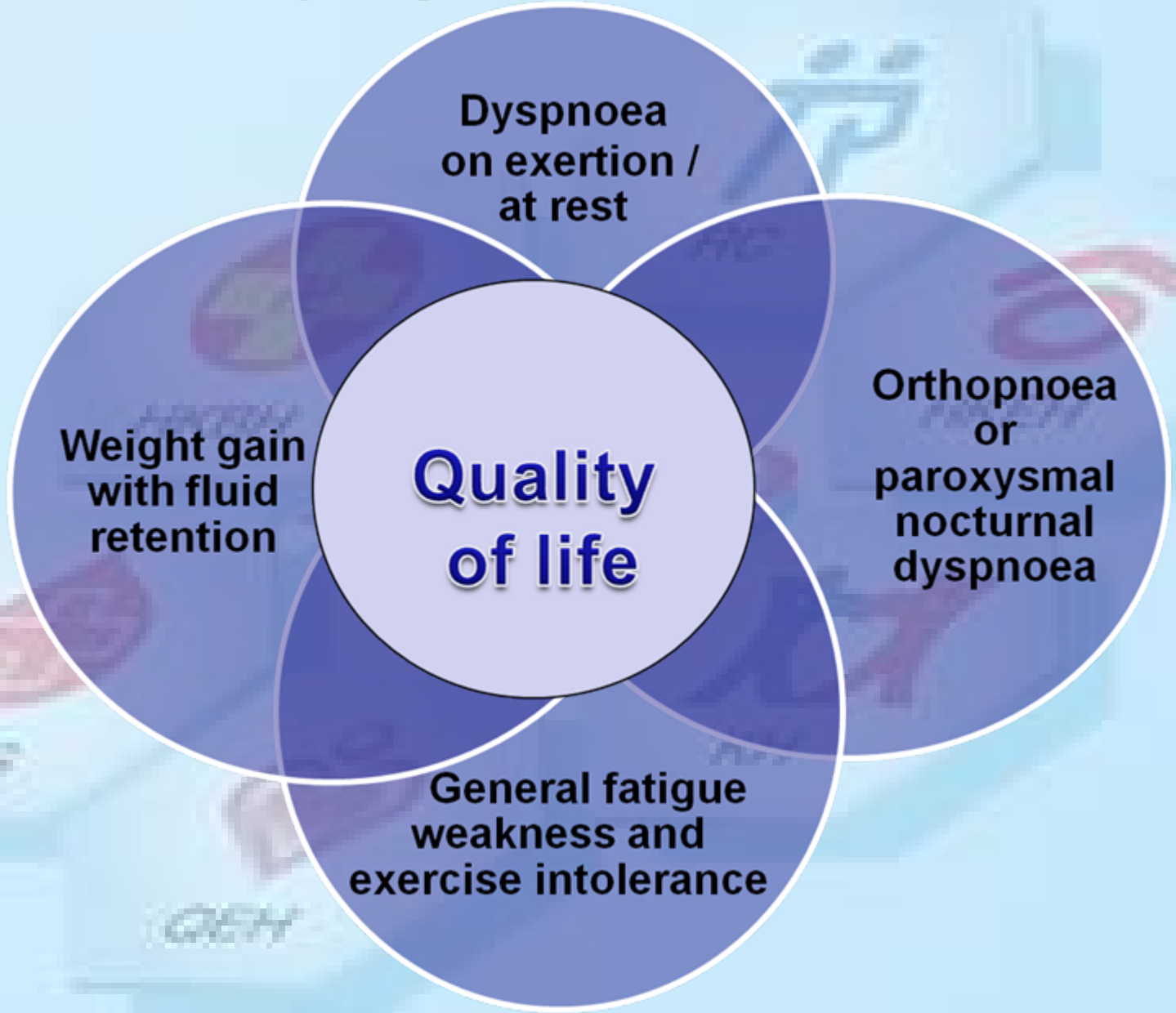
11th May 2010

Disease Burden
Chronic Heart Failure (CHF)

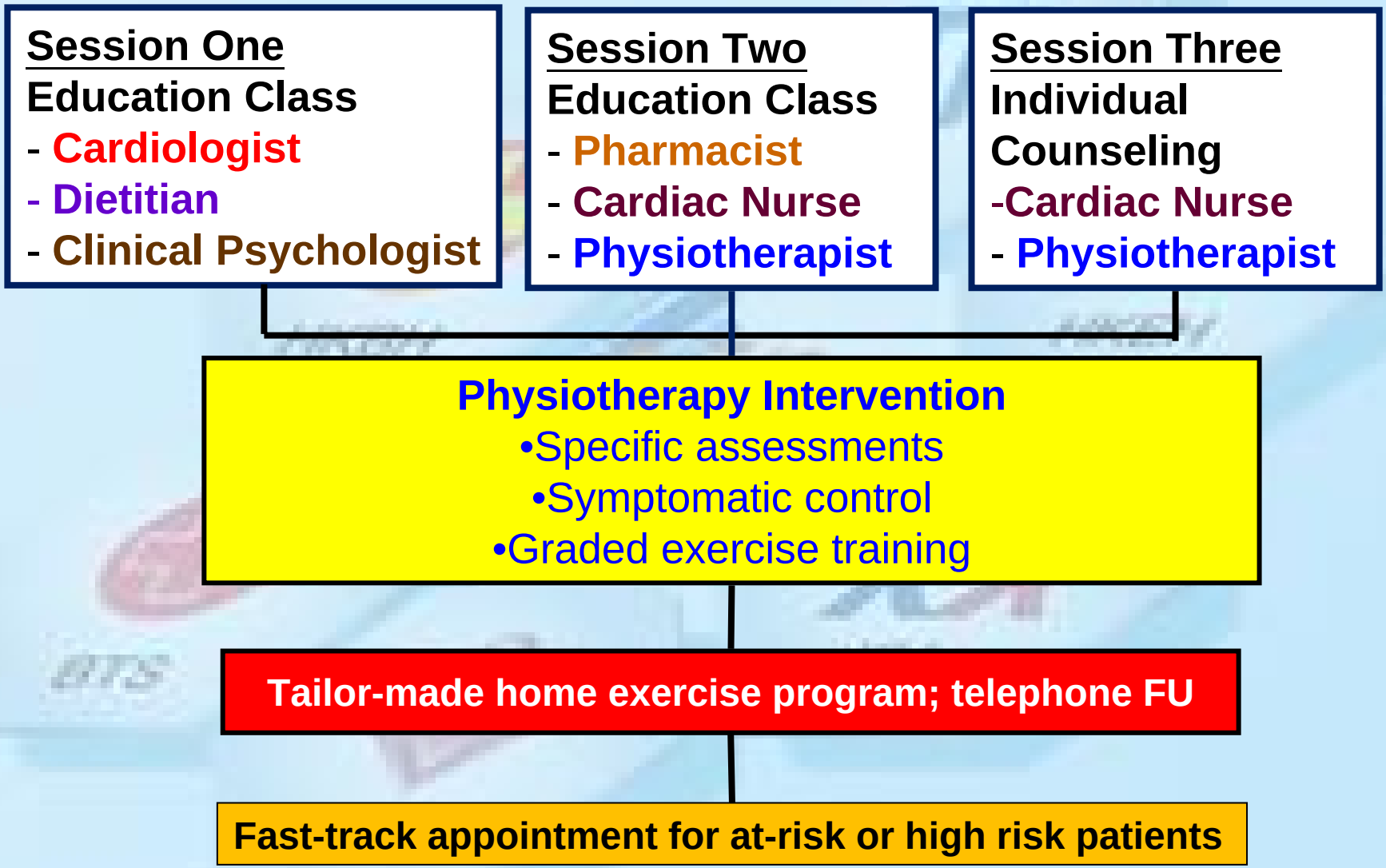


CDARS HA, 2010

Common Symptoms of Heart Failure



Chronic Heart Failure Program (2005)



1. Staff Credentialing

- Cardiologist and cardiac nurses to screen and recruit suitable patients

- Exercise session conducted by Physiotherapists with American College of Sports Medicine Certified Clinical Exercise Specialist®

2. Management of Dyspnoea at Home

- Home medication as prescribed
- Home Acu-TENS application to relieve dyspnoea for selected patients
- Equipment library

Yu TWD, Fung MC, Lam MYM. Proceeding HA Convention 2006 pp.36.
Cheung LCT, Jones AYM. Complement Ther Med 2007;15:109-114.
Lau KSL, Jones AYM. Aust J Phys 2008;54:179-184

3. Chronic Disease Self Management

Education classes

- Acquire adequate information and knowledge

Individual counseling
Goal setting
Making an action plan

- Feel empowerment and support

Regular feedback
Remodeling of mindset

- Gain confidence in controlling of their symptoms

4. Patient Adherence

- CHF patients are older, more fragile, less motivated type of clientele as compared with those who participate in Cardiac Rehabilitation Program (CRP)

- The default rate of the present program ~ 35%

- The default rate was 80% in Victoria experience

Hospital admission risk program: Chronic heart failure working party report, 2003

Measures to Improve Default Rate (1)

- Short waiting time (average 23 days)

- Arrange education classes and exercise session on the same date

Measures to Improve Default Rate (2)

- Remind the patient one day before appointment date
- Regular telephone follow-up every month for one year by Nurse and Physiotherapist

Objective of the Study

To evaluate the effectiveness of the Chronic Heart Failure Program (CHFP) on clinical outcomes and health care utilization at QEH

Methodology

- Retrospective, pre- and post-test study
- Patients' data between Jan 2008 and Feb 2009 were retrieved and analyzed

Outcome Measures

- **Severity of heart failure**
  New York Heart Association (NYHA) Scale

- **Exercise capacity**
  6-minute walk test

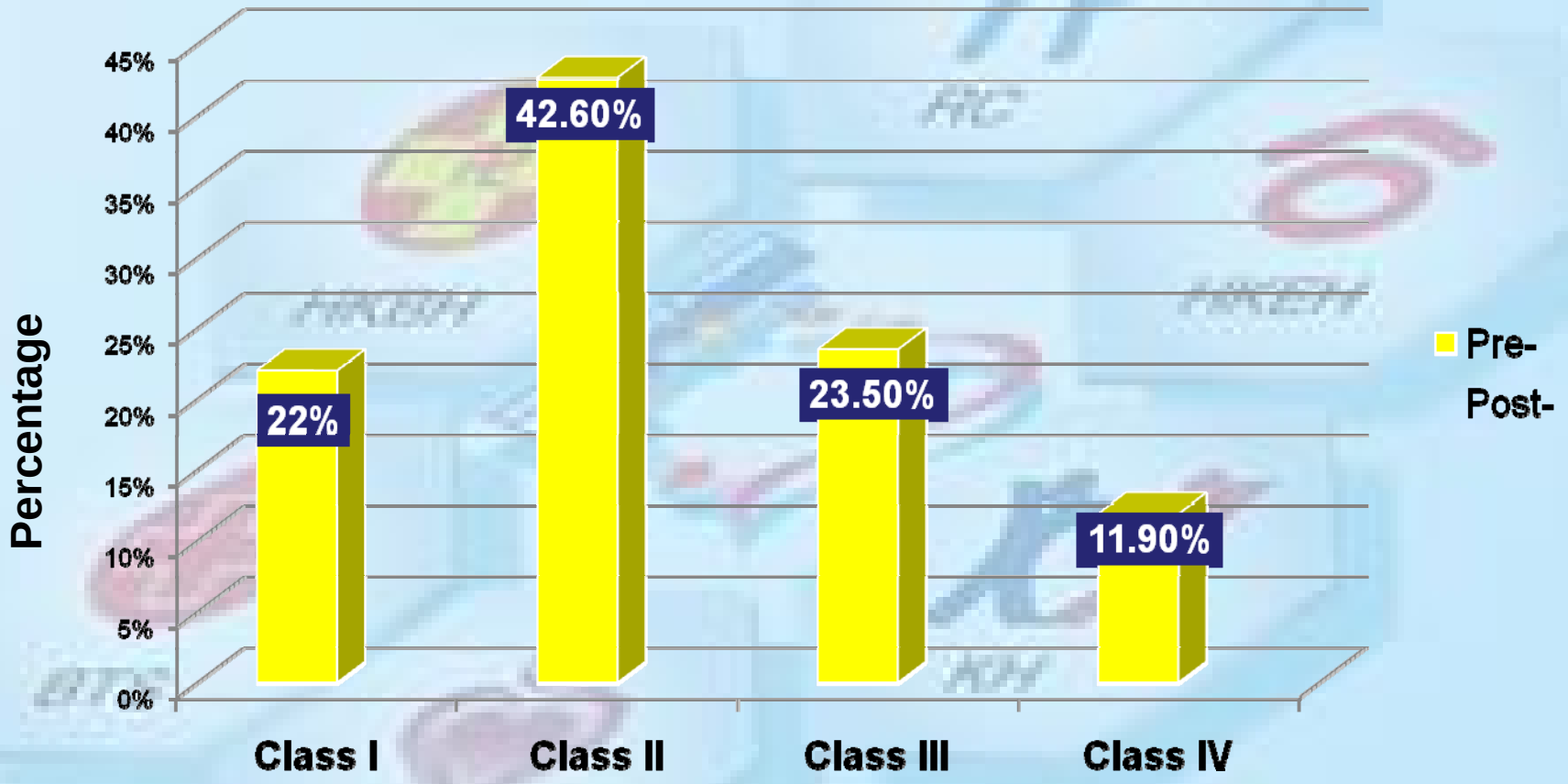
- **Health-related quality of life**
  Medical Outcomes Study (MOS) Short-form 12
  - Physical Component (PCS) and Mental Component (MCS)

- **Health care utilization**
  One-year admission rate

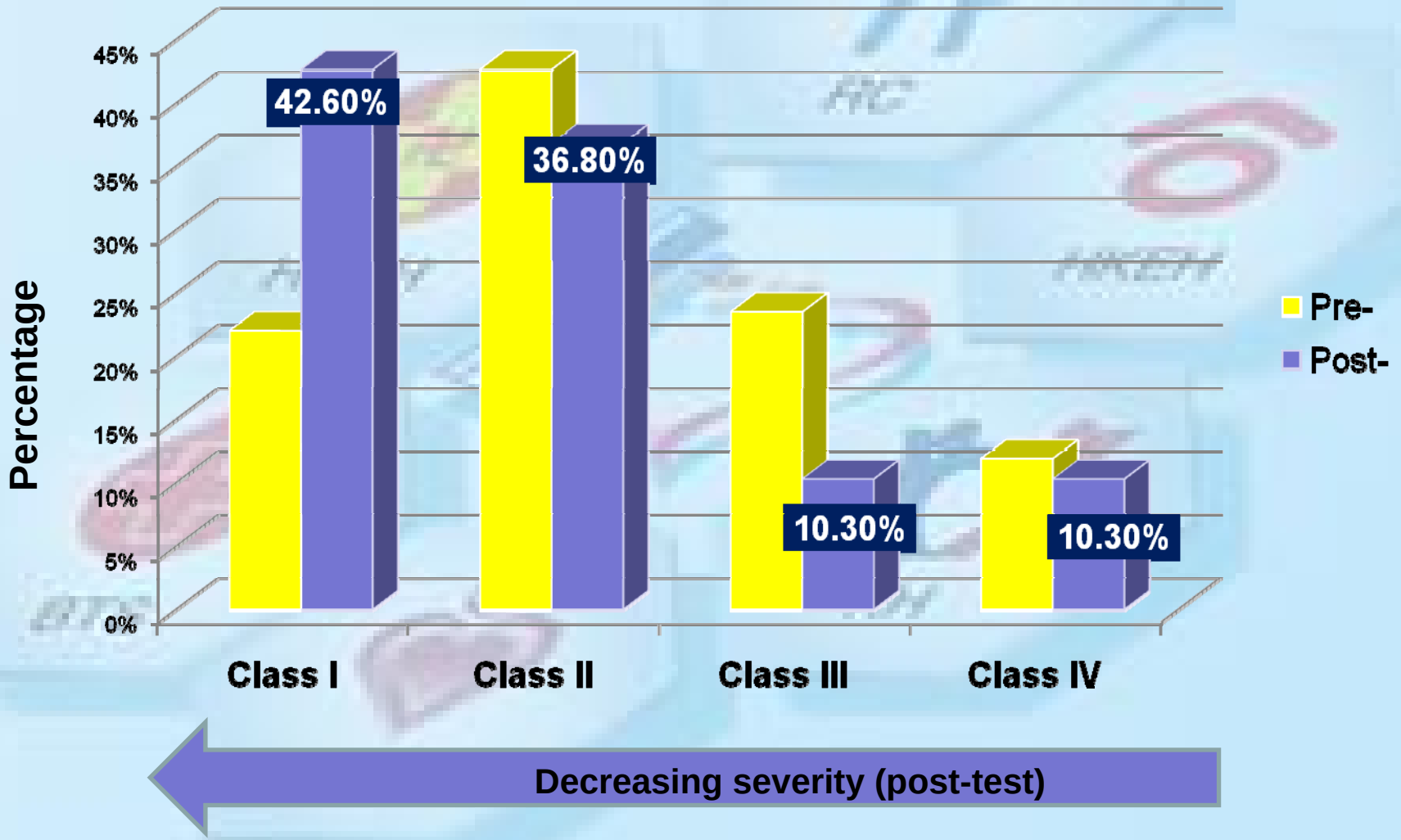
Demographic Data

- Total no. of patients recruited: 92
- Complete data set obtained: 68
- Male : Female = 71% : 29%
- Mean age: 65.41±12.37
- Mean body mass index: 24.23±4.06 kg/m^2

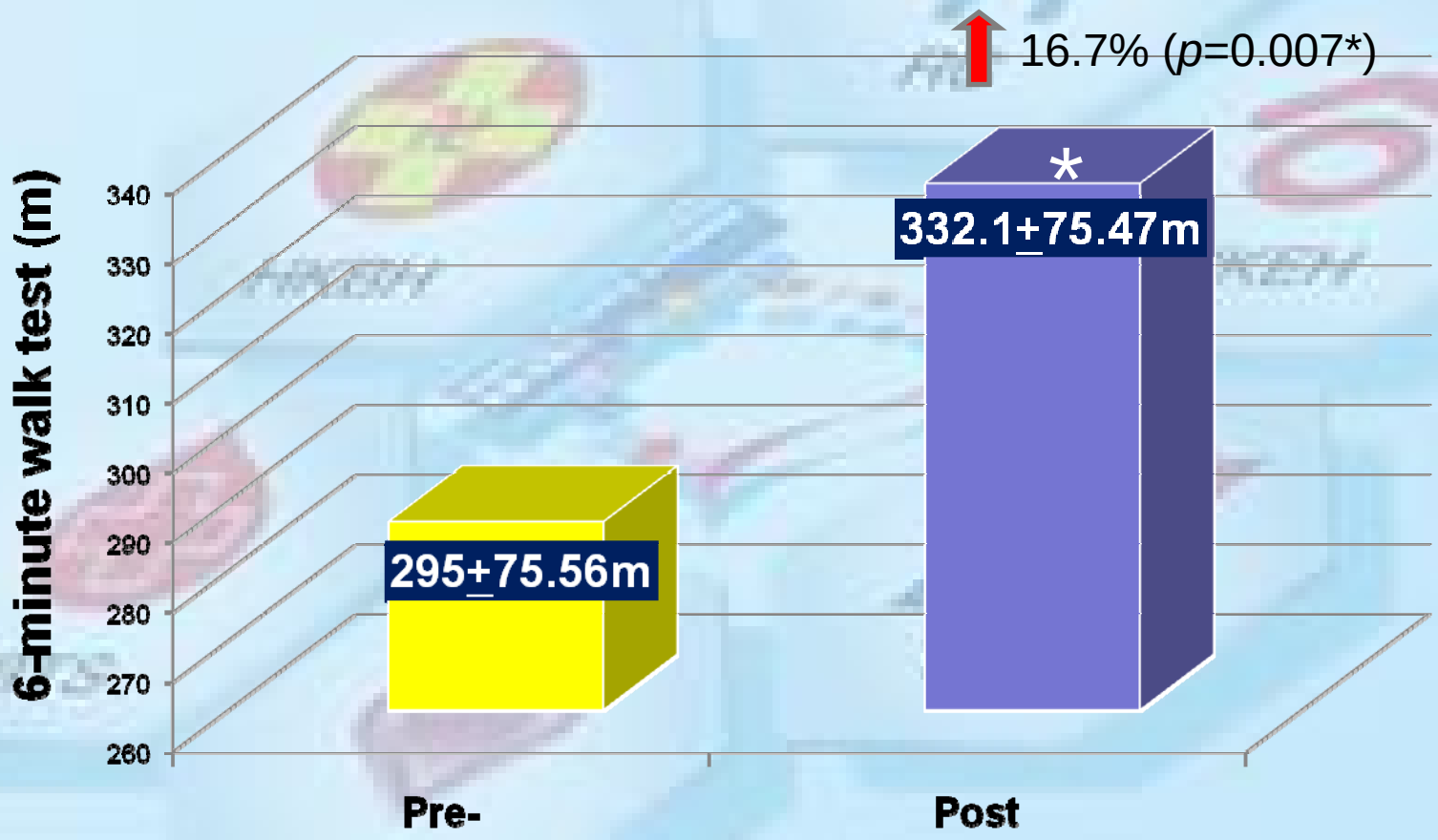
Severity of Heart Failure
The NYHA Scale



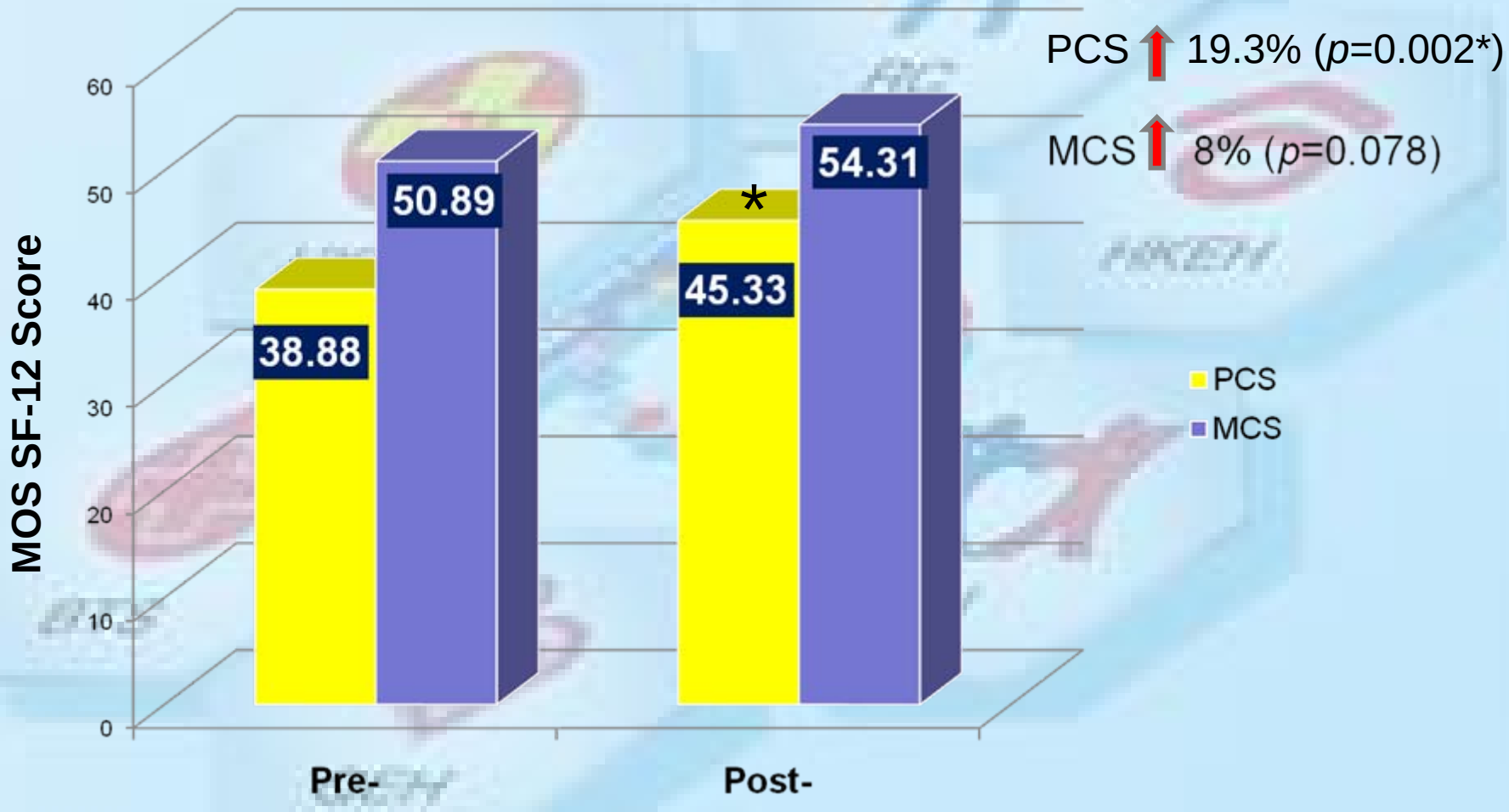
Severity of Heart Failure
The NYHA Scale



Exercise Capacity
6-minute Walk Test



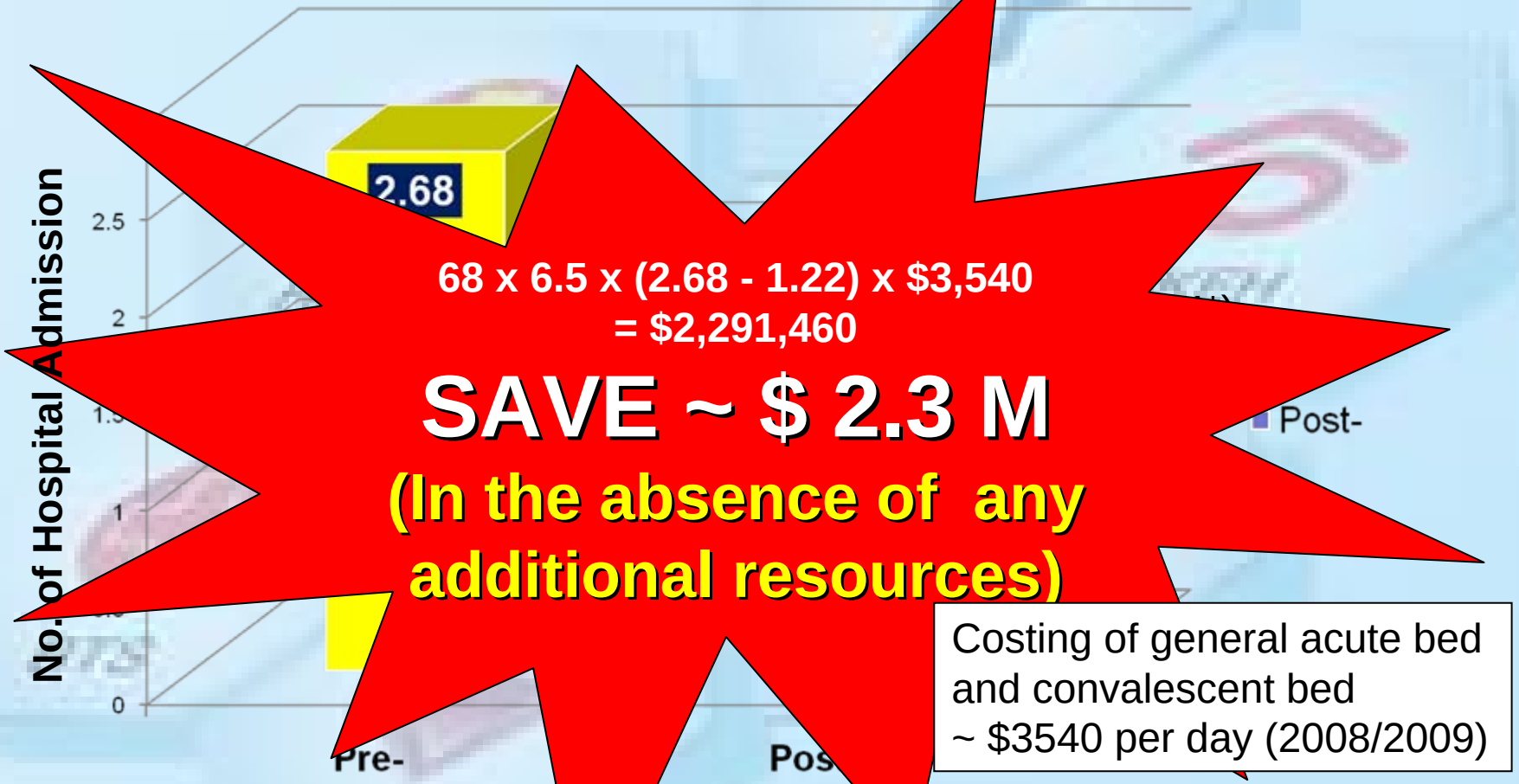
Health-related Quality of Life
MOS SF-12



Estimate Costing of the Program

Activities	No. of staff involved	Duration & frequency	Total no. of man hour involved	Costing (~$284 hourly rate)
Education classes	3 professionals each time from 6 professions	0.5 hour, once bimonthly	6x3x0.5=9	$2,556
Individual counseling	1 PT, 1 nurse	0.5 hour, once bimonthly	2x12x0.5x93= 1116	$316,994
Exercise training	2 PTs, 1 nurse	1 hour, once per month	3x12=36	$10,224
Telephone FU	1PT, 1 nurse	0.25 hour, once per month for one year	93x2x.25x12= 558 (for 93 patients)	$158,472
			Total :	**< 0.5M**

Health Care Utilization
One-year Admission Rate



68 x 6.5 x (2.68 - 1.22) x $3,540
= $2,291,460

SAVE ~ $ 2.3 M

(In the absence of any additional resources)

Costing of general acute bed and convalescent bed
~ $3540 per day (2008/2009)

Average length of stay ~ 6.5 days

Success Factors of the Program

Bring Home Message

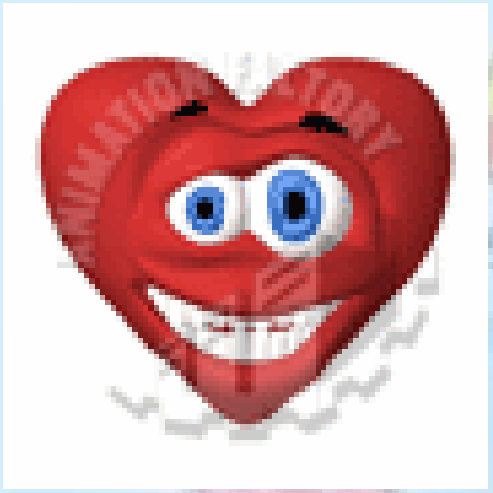
- Chronic Heart Failure is a costly disease and impose great burden to the health care system
- This service model is effective in improving clinical outcomes and reducing health care utilization without additional resources

References

1. ACSM's Guidelines for exercise testing and prescription 6th ed. Lippincott Williams & Wilkins.
2. ACSM's Guidelines for exercise testing and prescription 7th ed. Lippincott Williams & Wilkins.
3. Cheung LCT, Jones AYM. Effect of Acu-TENS on recovery heart rate after treadmill running exercise in subjects with normal health Complement Ther Med 2007;15:109-114.
4. Lau KSL, Jones AYM. A single session of Acu-TENS increases FEV_1 and reduces dyspnoea in patients with chronic obstructive pulmonary disease: a randomized, placebo-controlled trial Aust J Phys 2008;54:179-184
5. Hospital admission risk program: Chronic heart failure working party report, 2003
6. Scottish Intercollegiate Guidelines Network. Management of chronic heart failure SIGN 2007.
7. The Criteria Committee of the New York Heart Association. Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Great Vessels. 9th ed. Boston, Mass: Little, Brown & Co; 1994:253-256.
8. Yu TWD, Fung MC, Lam MY. Effect of acupoints Transcutaneous electrical stimulation (Acu-TENS) on dyspnoea and lung function in patients with asthma and chronic obstructive pulmonary disease (COPD) with strong asthmatic component – a pilot study. HA Convention 2006 proceeding. 2006 pp36.

Acknowledgements

- Mr. Gordon MAK, Senior Physiotherapist, QEH
- Mr. C W WOO, Physiotherapist I, QEH



Thank you very much