

# **Pilot on Community Oriented Patient Empowerment Program**



Cardiac Medical Unit of Grantham Hospital

Prepared by Clement K C Tsui

# Background

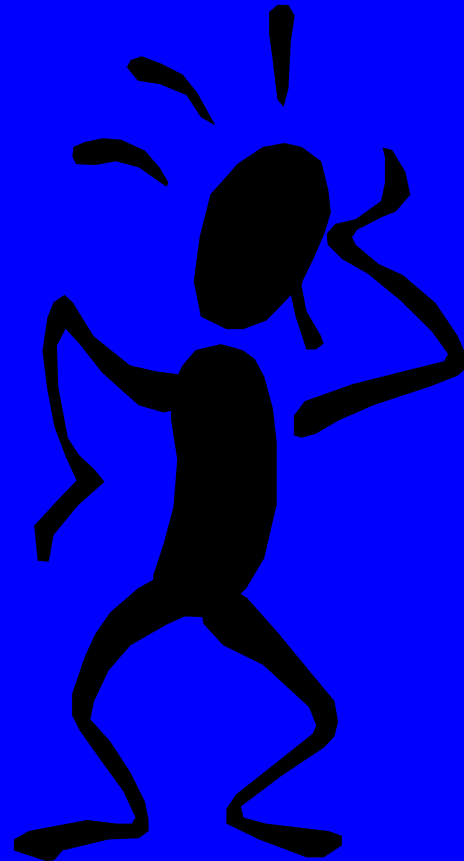
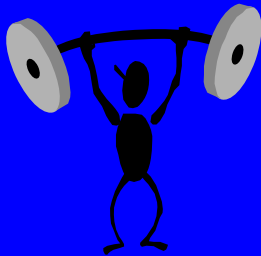
Post heart valve(s) repair/ replacement surgery



# Background

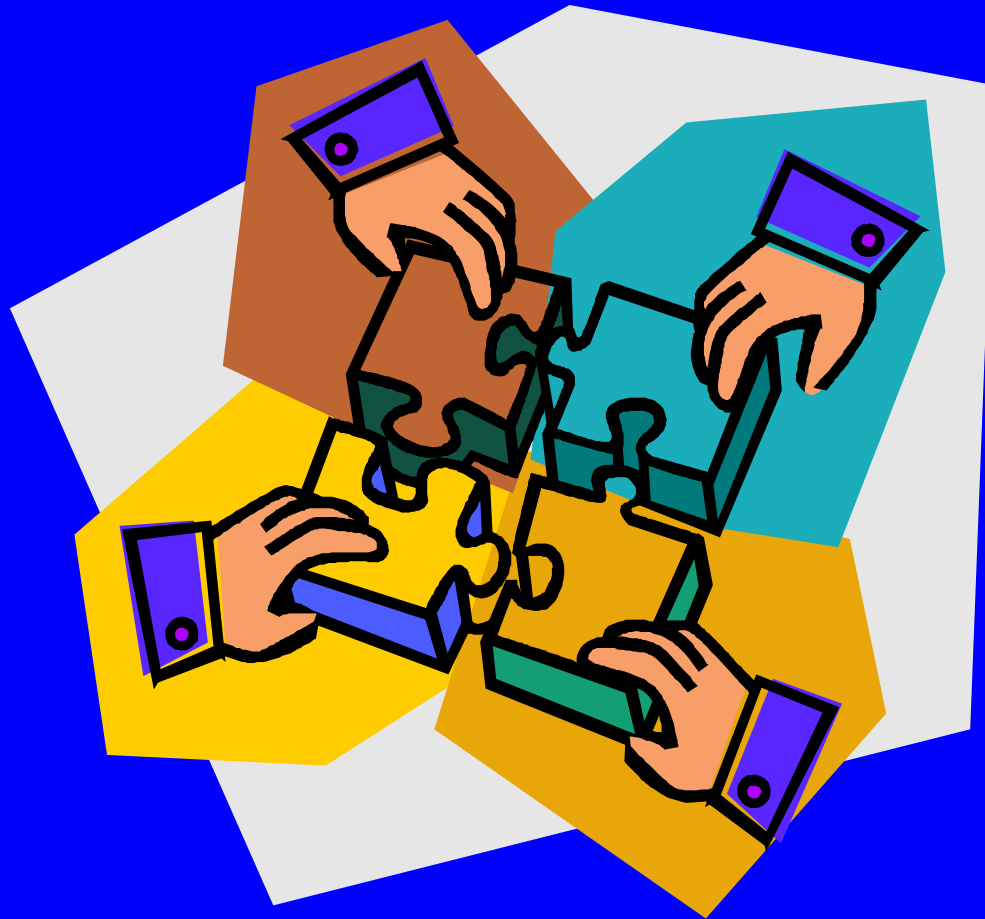
? Post-operative management

? Daily self-care decisions



# Background

Collaborate with Non-governmental Organization



# Background

- In 2006, the Cardiac Medical Unit of Grantham Hospital launched a pilot program with focuses on helping patients in enhancing their confidence and practicing skills to perform
  - disease management
  - role management

# Approach of the program

**Patient-centered**

**Disease based**

**Multi-disciplinary**

**Multi-sector**

**Multi-staging**

# The Expected Outcome of the Program

- ↓↓ abnormal INR result in each follow-up visit
- ↓↓ unplanned follow-up in clinic
- ↓↓ unplanned readmission to hospital
  
- ↑↑ exercise capacity level
- ↑↑ exercise compliance level
- ↑↑ drug compliance level
- ↑↑ dietary compliance level

# Flow Chart of Rehabilitation Program

## TIME FRAME

**Operation in Grantham Hospital**  
**Both Control Group and Experimental Group are receiving the same in-hospital treatment = Phase I CRP**

**1-2 weeks**

**(Control Group)**  
**Transfer back to referring Hosp. and continue in-hospital rehab.**

**(Experimental Group)**  
**Discharge Home**



**1-2 weeks**



**6 weeks (2/wk)**



**2 weeks**



**6 weeks (weekly)**



**3 months+(prn)**



**3 months**



**Discharge**



**Phase II CRP in CRC**

**Outpatient-based rehabilitation in RC or Follow-up in clinic**

**(Baseline assessment)**  
**Patient Empowerment Program**  
**Phase III CRP in NGO**



**Telephone follow-up & follow-up in clinic**



**(Final assessment) in CRC**



# Methods

## Inclusion Criteria

- **Age  $\geq$  18**
- **Patient underwent valvular repair/replacement surgery in Grantham Hospital**
- **Patient can read and write Chinese**
- **Patient had never received formal patient empowerment program from other hospital/clinic**

## Exclusion Criteria

- **Patient had significant mental and/or physical disability**
- **Patient had limited life expectancy**
- **Patient had concomitant major disease that could interfere the findings from the study.**

# Methods

## 1. Assessment Protocol

- Vital signs measurement
- Daily Body Weight
- Drug compliance
- Dietary compliance
- Exercise compliance
- Self-management goal

### Patient empowerment Pre-program Assessment Sheet (Valvular) (Form A2)

The frequency of admission due to Warfarin overdose or underdose (in the past 2 years): \_\_\_\_\_

Causes of hospital admission for treatment of Abnormal INR? \_\_\_\_\_

### Patient empowerment Pre-program Assessment Sheet (Valvular) (Form A1)

Program Enter Date: \_\_\_\_\_

Patient's Name: \_\_\_\_\_

ID: \_\_\_\_\_

Date of Birth: \_\_\_\_\_

Age: \_\_\_\_\_ Sex:  M  F

Marital Status: Single  Married  Divorced  Widow(er)

Smoker: \_\_\_\_\_

Occupation: \_\_\_\_\_ Education Level: \_\_\_\_\_

Drinker: \_\_\_\_\_

Diagnosis: \_\_\_\_\_

Operation: \_\_\_\_\_

- |  |   |
|--|---|
| <input type="checkbox"/> Close mitro-valvuloplasty                         | <input type="checkbox"/> Aortic Valve Replacement (tissue / mechanical) |
| <input type="checkbox"/> Mitral Valve Replacement (tissue / mechanical)    | <input type="checkbox"/> Percutaneous Balloon Valvuloplasty             |
| <input type="checkbox"/> Tricuspid Valve Replacement (tissue / mechanical) | <input type="checkbox"/> Others _____                                   |

Drugs:  Anticoagulant(s)

Diuretic(s)

Beta-blocker(s)

Calcium-channel blocker(s)

Cardiac Glycoside(s)

## 自強日誌



姓名 \_\_\_\_\_

日期 \_\_\_\_\_

Underdose

\_\_\_\_\_ weeks

\_\_\_\_\_ years): \_\_\_\_\_

Significantly

/No  
/No  
/No  
/No

% BH: \_\_\_\_\_ cm BW: \_\_\_\_\_ kg

Blood product  
m

Abnormal Bleeding (site/s)

Q6H  Q8H

# Methods

## 2. Apparatus & Measuring Instruments

- BP/P/SaO<sub>2</sub> measuring devices
- Patient empowerment Logbook
- Weight Scale
- Telephone
- Cardiopulmonary exercise machines



自強日誌



姓名 \_\_\_\_\_

日期 \_\_\_\_\_

# Methods

## Data analysis of the program

- The frequency in presenting abnormal INR result in each follow-up visit
- The frequency of unplanned follow-up in clinic
- The frequency of unplanned readmission to hospital
- Exercise capacity level
- Exercise compliance level
- Body Mass Index
- Drug compliance level
- Dietary compliance level

# PHASE I Cardiac Rehab Program





# PHASE II Cardiac Rehab Program

心臟復康中心

Cardiac Rehabilitation Centre

小心頭  
Mind your Head

小心  
Mind

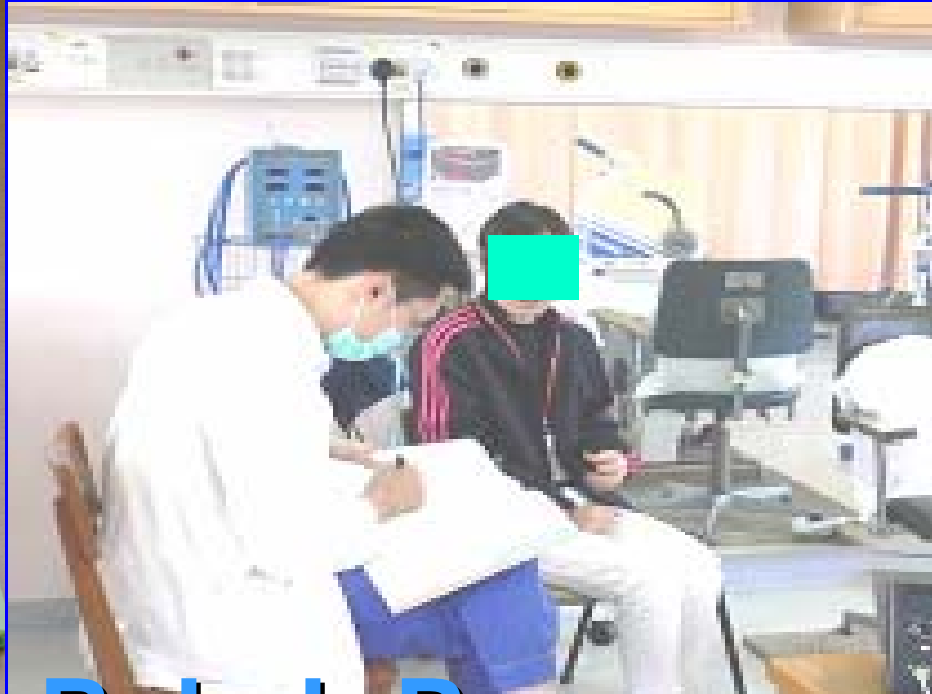
FE-AGU

enloza

ergoline



# PHASE III Cardiac Rehab Program

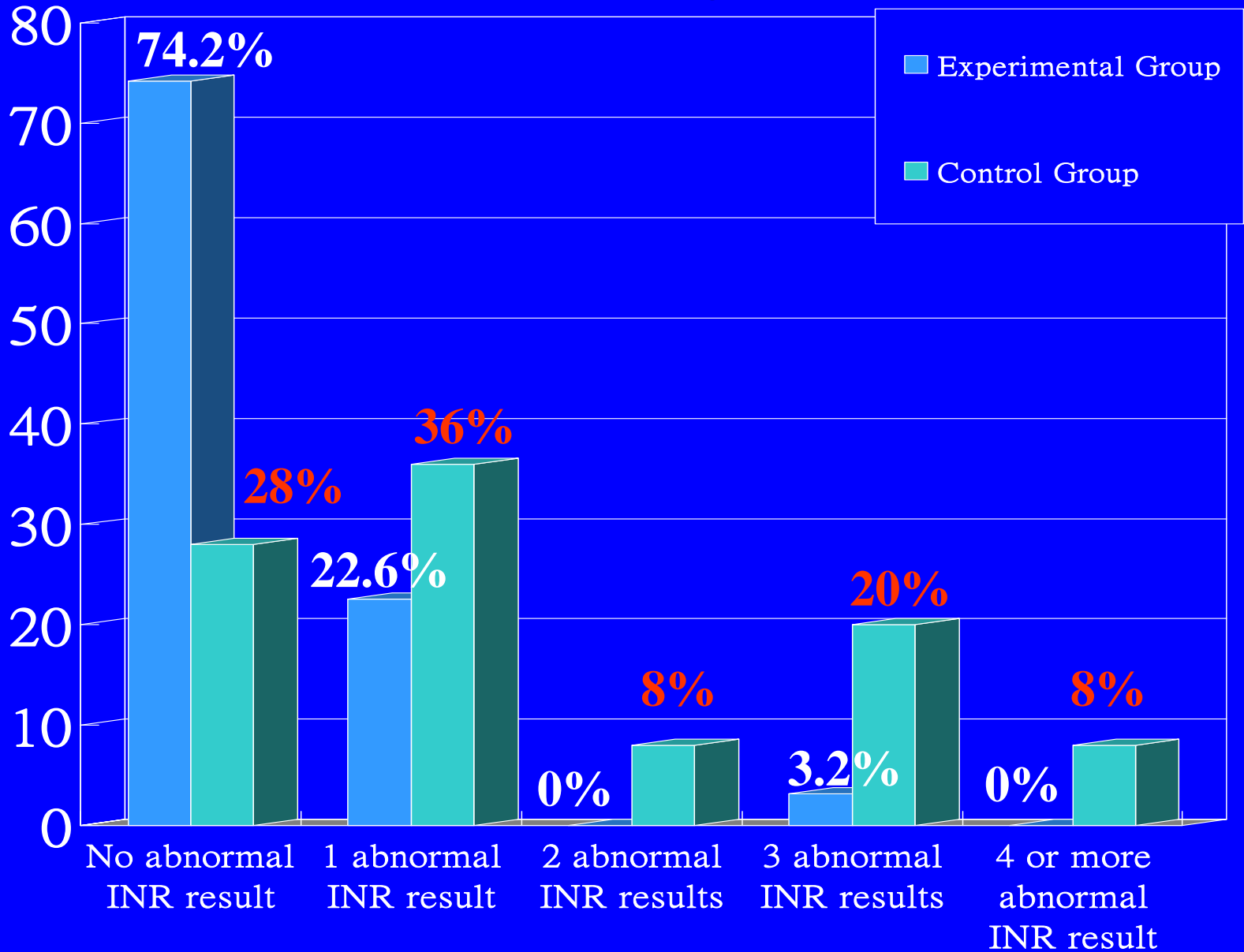


Characteristics of study population		Experimental Group	Control Group
Sex	M (No./%)	09(29.1%) *	13(42%) *
	F (No./%)	22(70.9%) *	18(58%) *
Age	Range	35-69	34-70
	Mean (S.D.)	49.8(7.23)	53.7(10.22)
Employment status	Working%	65.3%	57.3%
	Not working%	34.7%	42.7%
Education level	Not received formal education	16.2%	12.9%
	Primary	25.8%	31.2%
	Secondary	38.7%	40%
	Tertiary	19.3%	15.9%

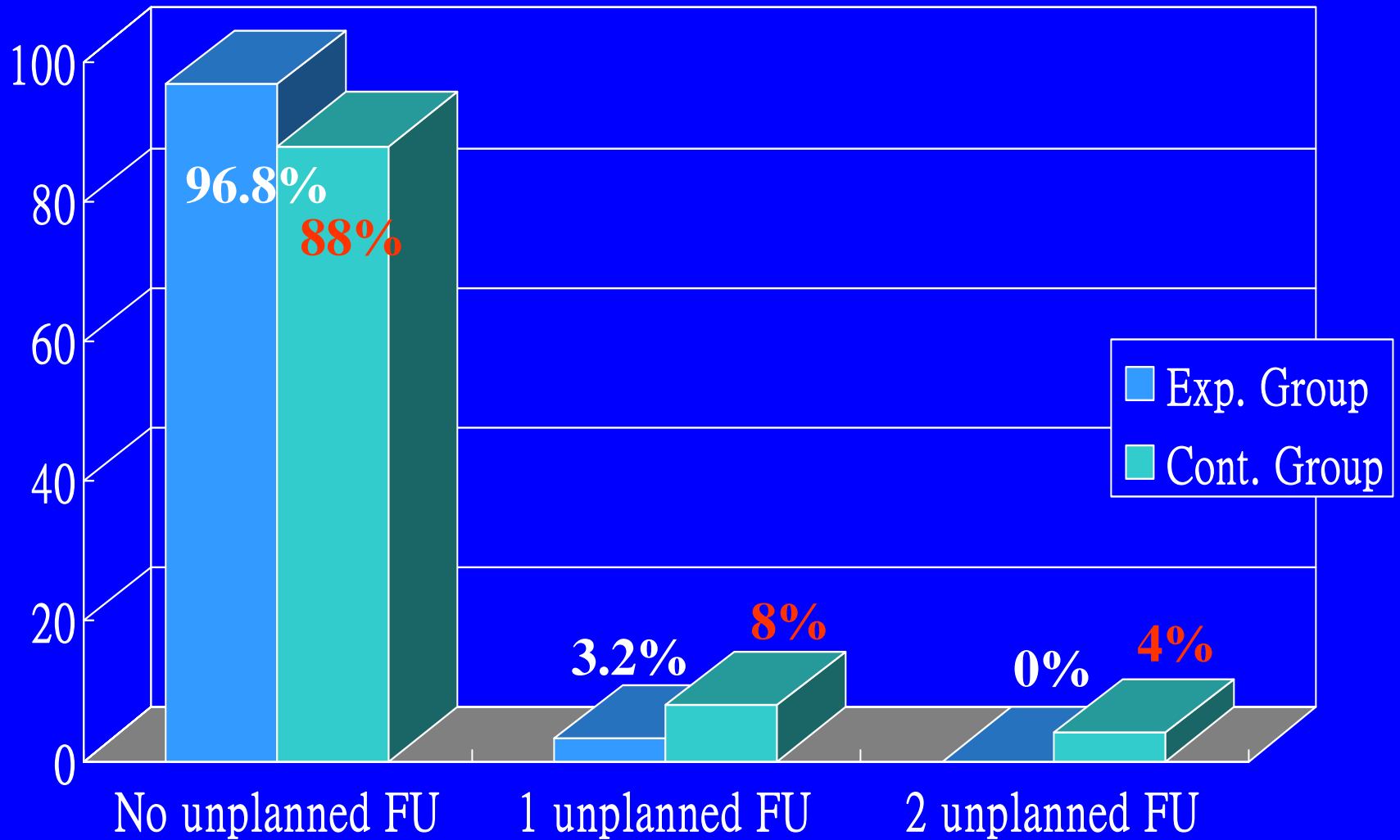
\* Indicate significant difference between experimental group and control group.



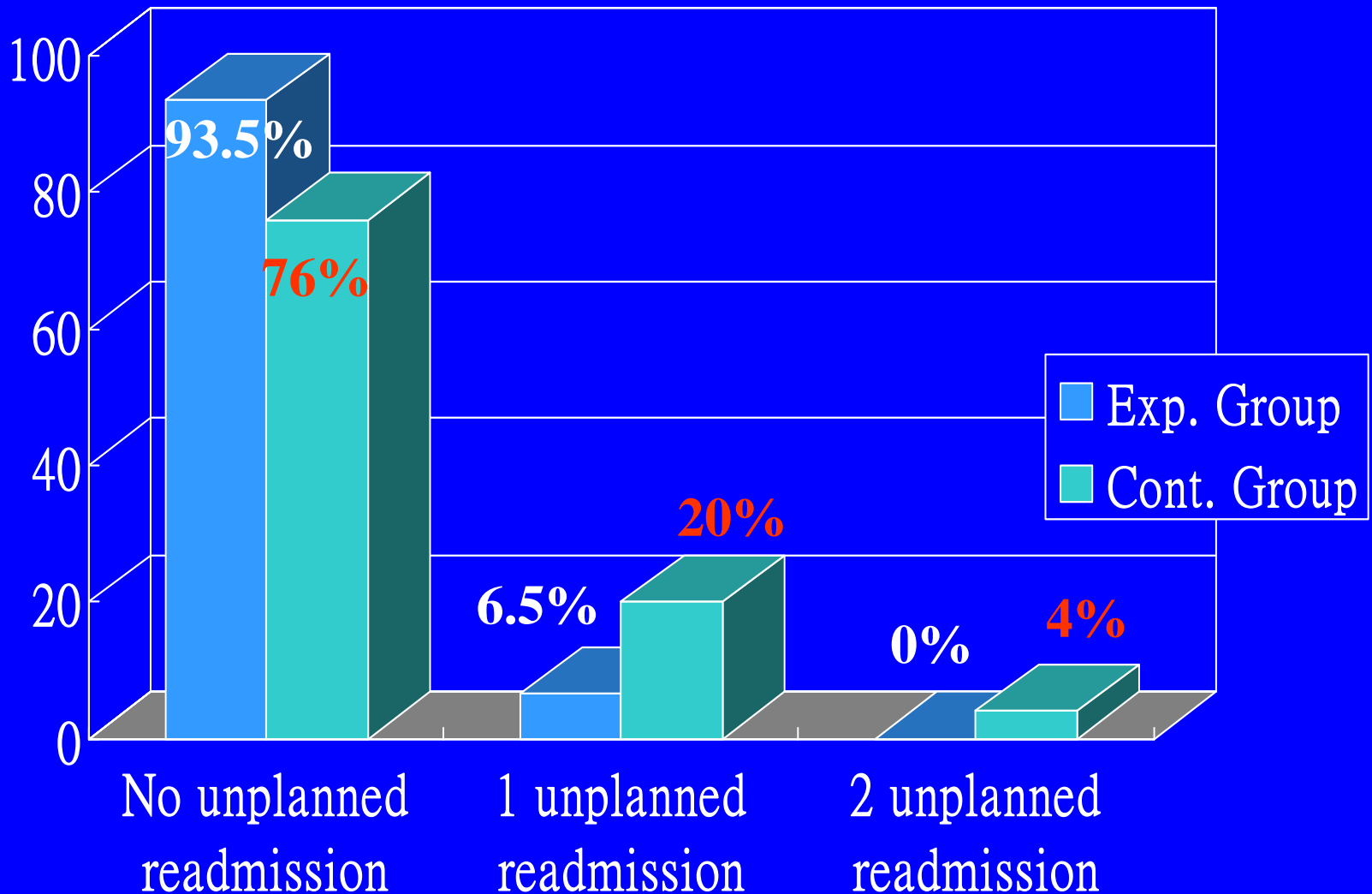
# Frequency of presenting abnormal INR result requires warfarin adjustment during each visit in Clinic



# Frequency of unplanned FU visit in Clinic



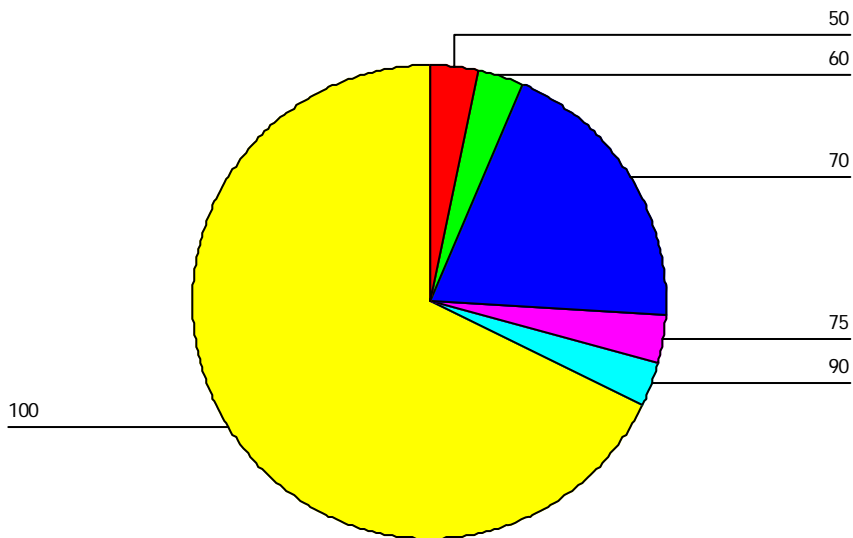
# Frequency of unplanned readmission to hospital



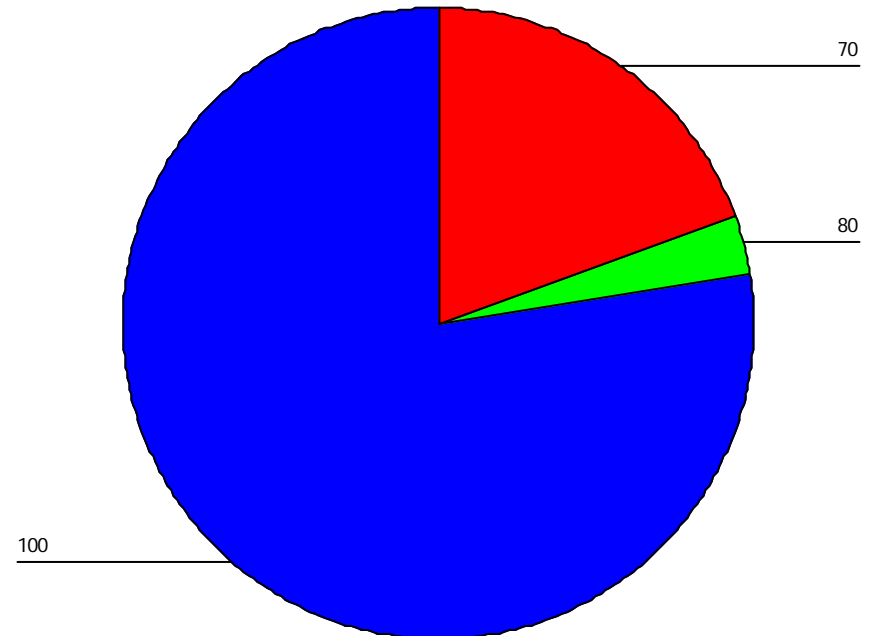
# Exercise Compliance level of Experimental group

Full Compliance	Pre Program	Post Program
(100%)	67.7%	77.4% (↑9.7%)

Pre-intervention



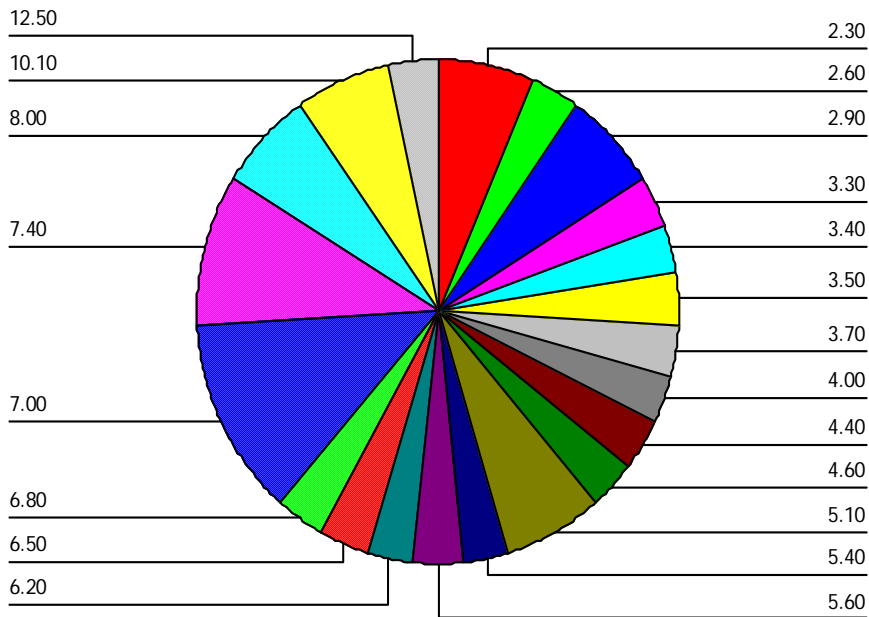
Post-intervention



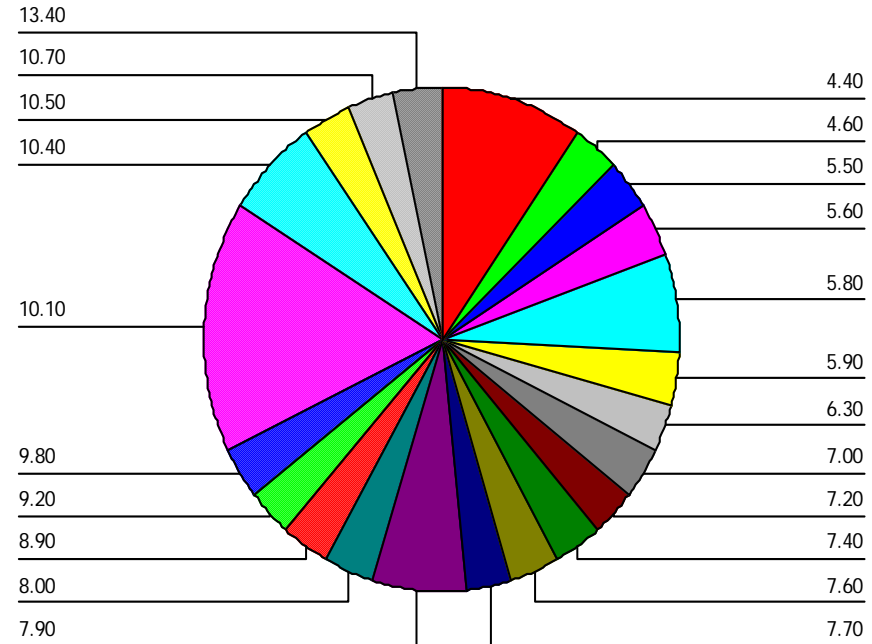
# Exercise Capacity level of Experimental group

	Pre Program	Post Program
<b>Mean value (MET)</b>	<b>5.79 ± 2.50</b>	<b>7.97 ± 2.33 (↑2.18)</b>

PREMETS



POMETS



# Body Mass Index of Experimental group

Pre Program

Mean = 22.25 ± 2.48

BMI 15.0-18.5 = 2

BMI 18.5-25 = 23

BMI >25 = 6

Post Program

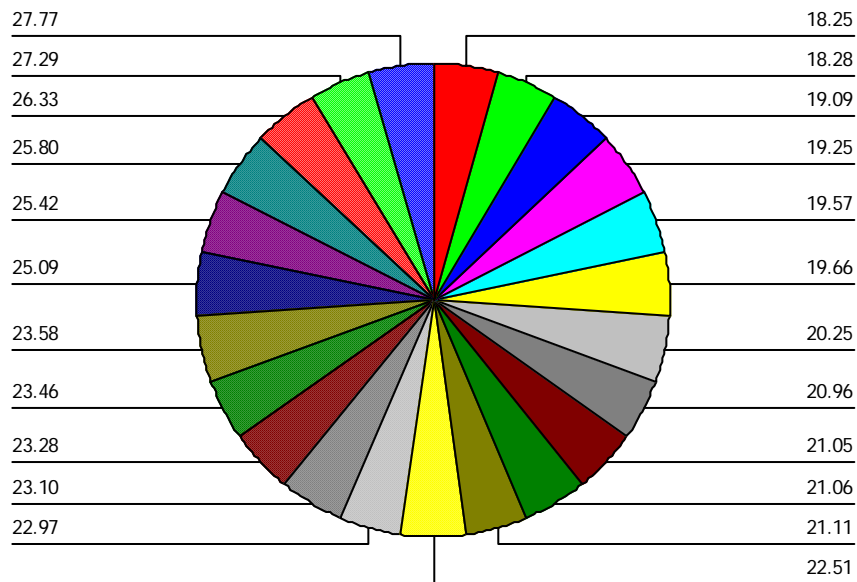
Mean = 22.51 ± 2.68 (↑0.26)

BMI 15.0-18.5 = 0

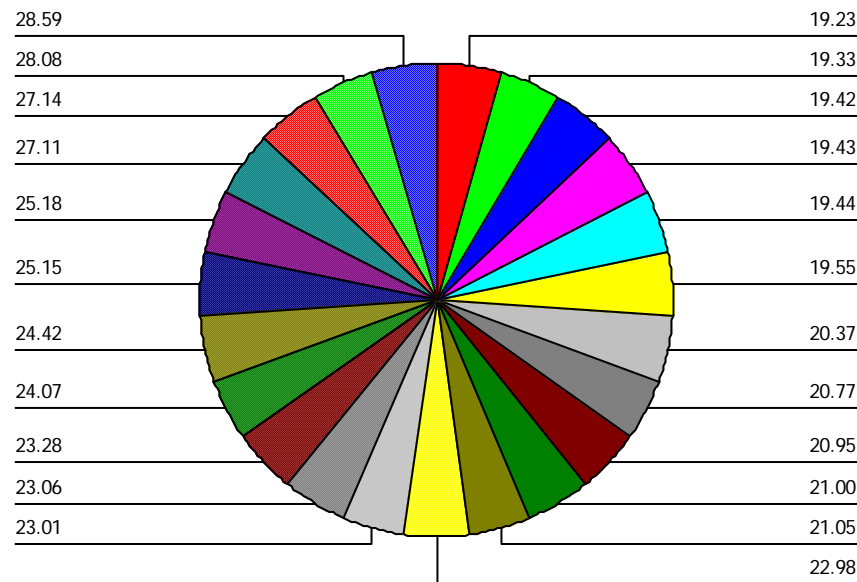
BMI 18.5-25 = 25

BMI >25 = 6

Pre-intervention BMI



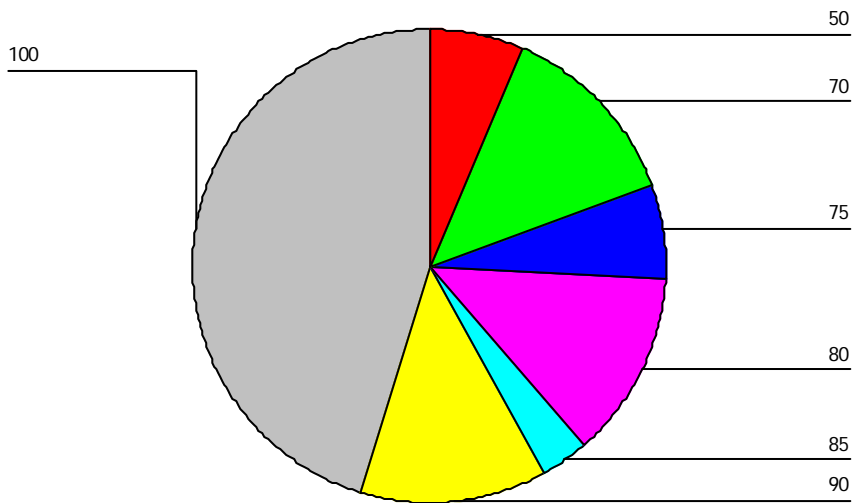
Post-intervention BMI



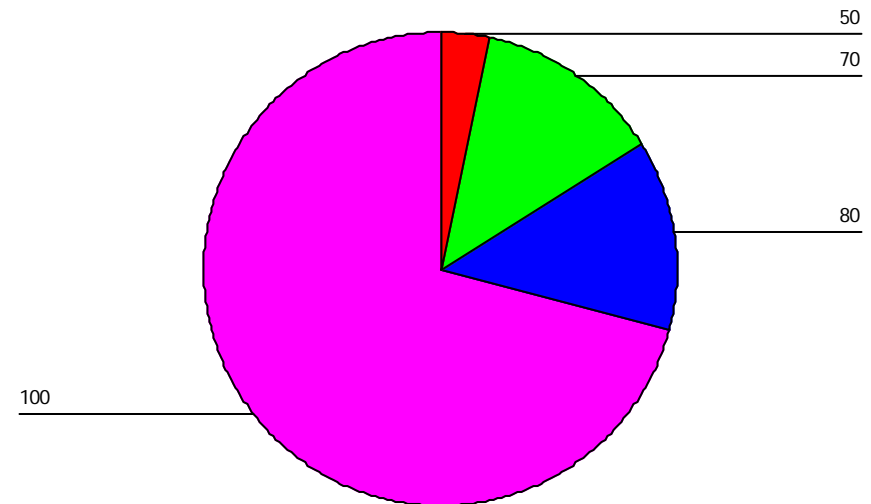
# Dietary Compliance level of Experimental group

Full Compliance	Pre Program	Post Program
100%	45.2%	71.0% (↑25.8%)

Pre-intervention



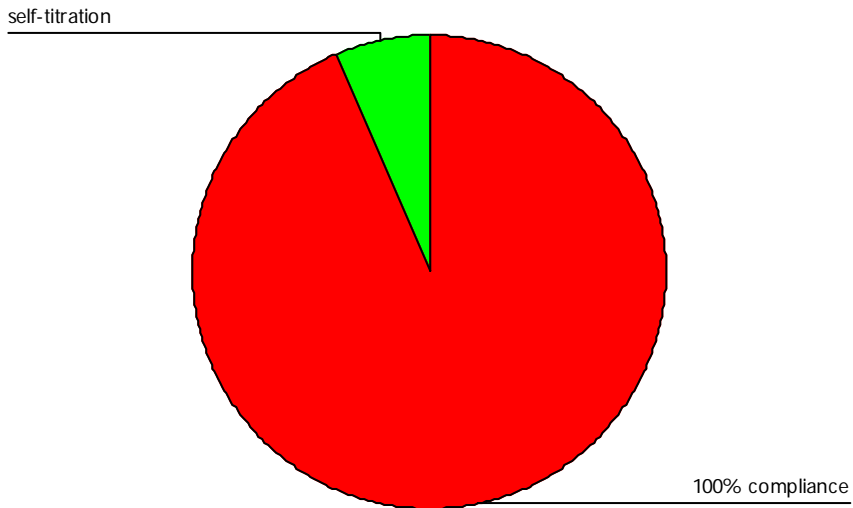
Post-intervention



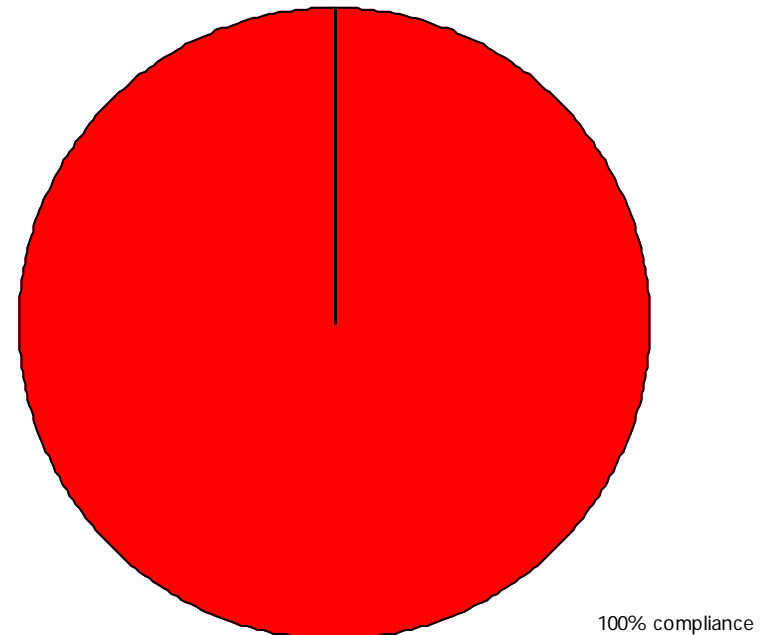
# Drug Compliance level of Experimental group

Full Compliance	Pre Program	Post Program
100%	98.0%	100% (↑2%)
Reason for non-compliance		Self-titration of medications

Pre-intervention



Post-intervention





# Limitations

- Duration of the Study
  - Behaviour modification is a long term process.
- Small Sample size
  - The larger the sample size, the smaller sampling error tends to be.
- Non-randomized control trial study
  - The benefit of this program could be overestimated since the voluntary participants were keen to adapt the modification of lifestyles.
- Group Comparison
  - Without the comparison of non-randomized control group, it is quite difficult to determine whether the observed outcomes could have occurred without intervention.

# Conclusions

- The patient empowerment program was proven to be effective in
  - maintaining the therapeutic level of patient's INR
  - minimising the frequency of unplanned follow-up and readmission to hospital.
  - improving patient's exercise compliance, drug compliance and dietary compliance levels.
- Health care cost can be lowered by:
  - ↓ frequency of unplanned follow-up
  - ↓ frequency of readmission
  - Partnership with NGO for rolling out of patient empowerment program in the community

# Acknowledgement

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Thank You

