



基督教靈實協會  
靈實日間社區康復中心

東華東院  
綜合社區復康中心

# Integrated Neurological Rehabilitation Program in Community – A way to Enhance, Empower and Engage

Mr. Liu Kin-Lun Alan  
Physiotherapist I  
Tung Wah Eastern Hospital  
11/5/2010



東華三院  
Tung Wah Group of Hospitals

140  
TWGHs 140th Anniversary  
東華三院一百四十周年

# Background

*Neurological Rehabilitation Program* was shown to have positive health benefits:

- Physical function
- Cardiopulmonary fitness
- Risk factors
- Quality of Life





# Background

## *Community Neurological Rehabilitation*

### *Physical effect*

- Improve fitness
- Improve mobility function

### *Lifelong effect*

- Accommodate the persisting neurological deficits
- Engage the caregivers
- Reintegrate into home and community

# Background

## TWEH

- *500 in-patient stroke cases per year*

## Integrated Community Rehabilitation Centre (ICRC)

- *Multi-disciplinary*
- *Integrated care pathway*
- *Continuation of stroke rehabilitation*
- *Intensive post-discharge training*
- *250 new stroke cases each year*



# HKEC Stroke Rehabilitation

## Stroke patients

PYNEH

TWEH

ICRC

Community

In-patient

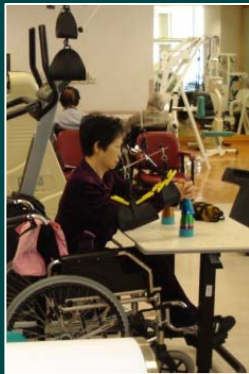
Community

# ICRC

*Intensive post-discharge training*

## *Early stage*

- *Body weight support walking training*
- *Neuro-facilitation*
- *Muscle tone control*



# ICRC

*Intensive post-discharge training*

## *Late stage*

- *Walking training*
- *Strengthening*
- *Advance balance training*



# ICRC

*Intensive post-discharge training*

- *3-5 times per week*
  - *Average: 3-4 months  
(~ 20 sessions)*
- 
- *Residual impairment*
  - *Room for further training  
& improvement*



**Community**





## Traditional Service Model

Stroke patients

Out-patient PT/OT sessions

Community

## New Model of Community Service

Stroke patients

ICRC

Appropriate case are selected to community service

Community Stroke Rehabilitation



# Development of New Model of Community Service



**Goal:** Patient empowerment  
Social reintegration  
Synergistic input  
Ongoing stroke rehabilitation

## Program

- Duration: 1 - 2 hours per sessions
- Total: 20 - 30 sessions
- 2 - 3 sessions per week

# Community Partner



基督教靈實協會 靈實日間社區康復中心

Haven of Hope Community Rehabilitation Day Centre  
(HOH CRDC)



# Objectives

- To address the demand for early community reintegration
- To evaluate the feasibility and improvement of clinical parameters of this community based rehabilitation program



# Study Design

Stroke patients



# Study Design

Stroke patients



Tung Wah Eastern Hospital  
ICRC



# Study Design

Stroke patients



Tung Wah Eastern Hospital  
ICRC



Haven of Hope  
Community Rehabilitation Day Centre





## Inclusion criteria

- Treatment goal
- Follow-up support
- Caregiver training
- Home modification
- Prescribed aids
- Residual complications
- Agreed for Community rehabilitation



## Pathway

- I. Multidisciplinary Assessment & Conference
- II. Goal setting
- III. Appropriate cases are selected

# Study Design

Stroke patients



Tung Wah Eastern Hospital



ICRC



**TWEH-HOH:**

mutual supervision

& continuous feedback

Haven of Hope



Community Rehabilitation Day Centre



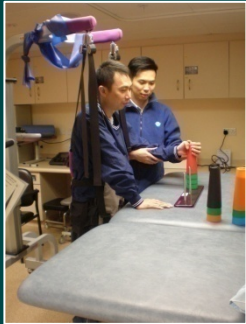




## New Model of Community Service (HOH CRDC)

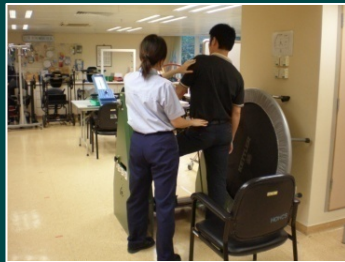
- I. Centre-base training
- II. Non-centre base training

# New Model of Community Service



## Centre-base training

- Physical & cognitive performance
- Individual training programs
- Group training programs



# New Model of Community Service



## Non-centre base training

- Lifestyle re-engineering
- Community exploration



# Outcome Measurements (Pre and post HOH CRDC)

- 1) Physical**  
Berg's Balance Scale (BBS)
- 2) Functional**  
Modified Barthel Index (MBI)
- 3) Social Integration**  
Community Integration  
Questionnaire (CIQ)

# Results

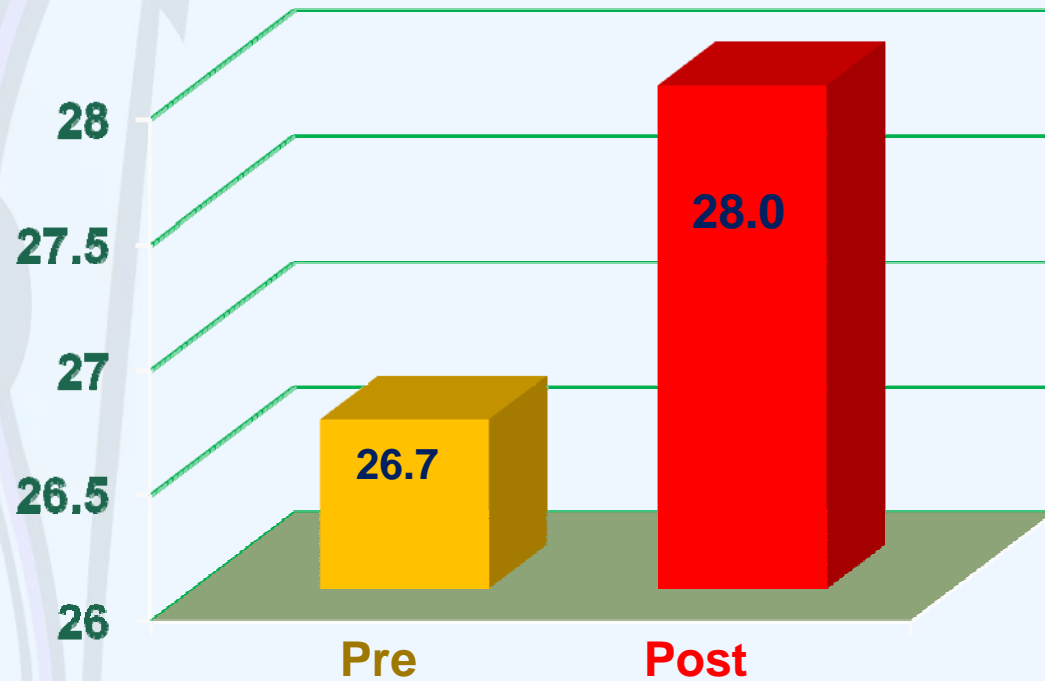
<b>Date</b>	<b>2008 – 2009</b>
<b>No. of patients</b>	<b>59 (20 completed program for analysis)</b>
<b>Gender (Female)</b>	<b>6 (30%)</b>
<b>Mean Age</b>	<b>57.6 (Range: 36 – 80)</b>
<b>Diagnosis</b>	<b>CVA Infarction: 13</b> <b>Haemorrhage: 5</b>
<b>Mean training duration</b>	<b>30 sessions</b> <b>22 weeks</b>
<b>Drop-out Rate</b>	<b>1</b>
<b>Adverse Events</b>	<b>0</b>





# Physical ability

## Berg's Balance Scale (BBS total 56)

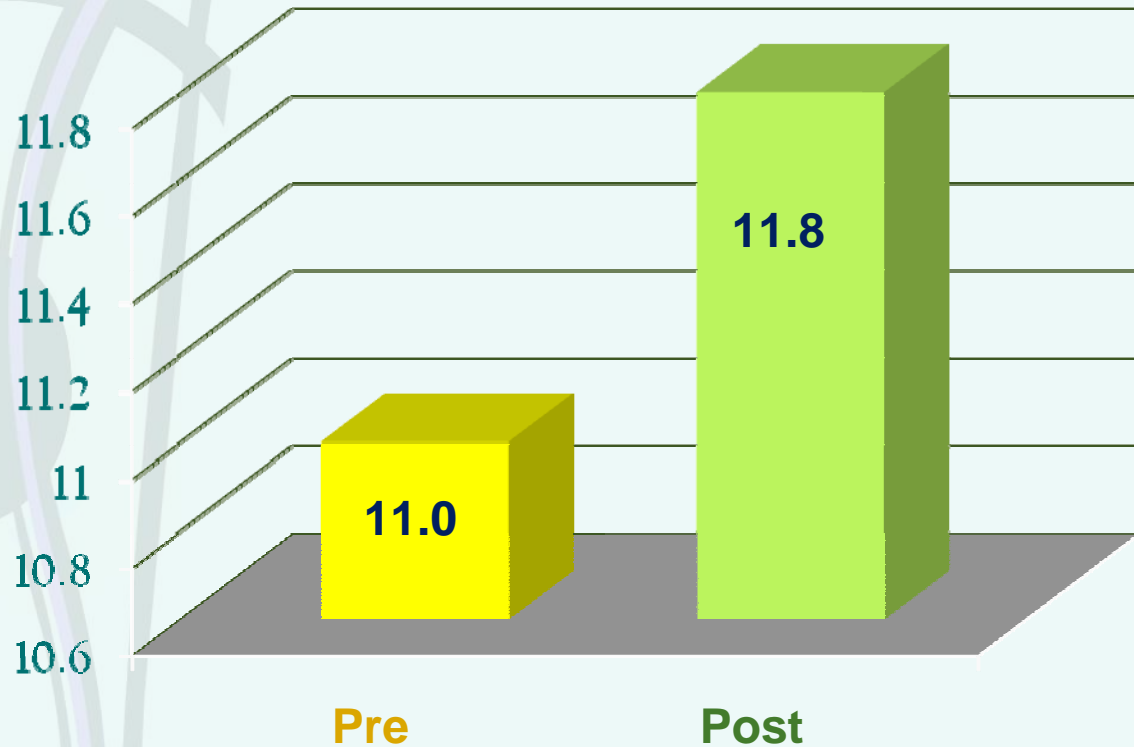


**Improvement in balance by 5%**



# Functional ability

## Modified Barthel Index (MBI total 20)

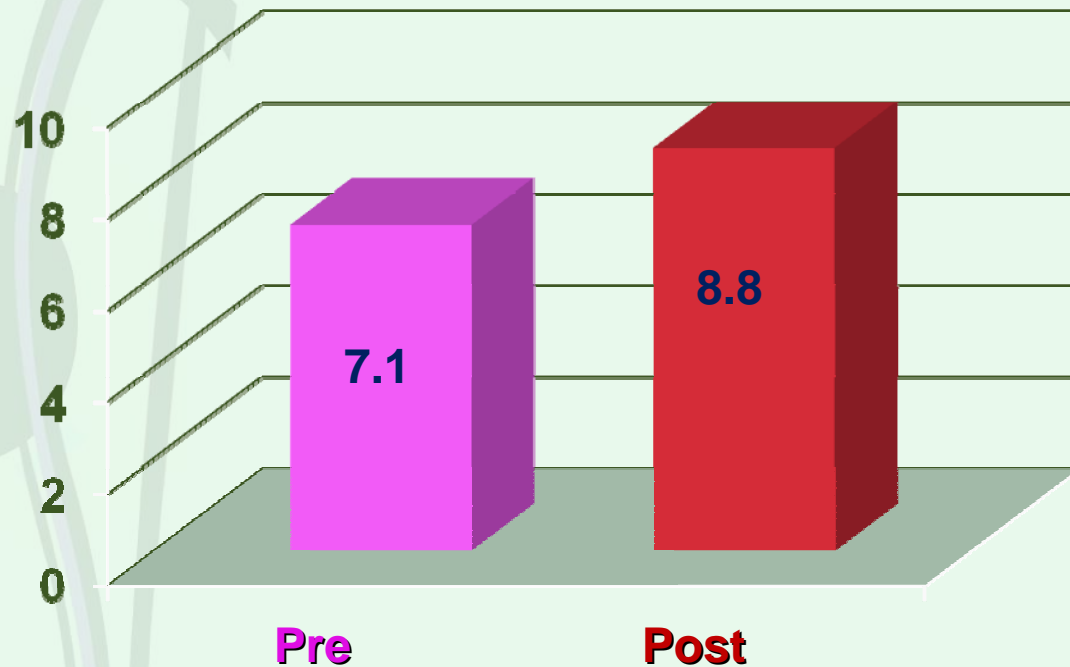


**Improvement in functional ability by 8%**



# Social reintegration

## Community Integration Questionnaire (CIQ total 29)



**Improvement in social reintegration by 24%**



# Cost Implication

- ◆ Active ICRC stroke rehabilitation duration:  
3 - 4 months (average)
- ◆ HOHCRDC community rehabilitation duration:  
4 - 5 months (average)
- ◆ ICRC: \$900 /patient/ session  
(Other GDH: ~ \$1300 /patient/ session)
- ◆ HOHCRDC: \$100 /patient/ session



# Cost Implication

- ◆ Active ICRC stroke rehabilitation duration:  
3 - 4 months (average)
- ◆ HOHCRDC community rehabilitation duration:  
4 - 5 months (average)
- ◆ ICRC: \$900 /patient/ session  
(Other GDH: ~ \$1300 /patient/ session)
- ◆ HOHCRDC: \$100 /patient/ session

**Cost Effective**



# Discussion

## 3 Win Situation



- Continuation of rehabilitation
- Early discharge to community
- Social reintegration
- Patient being empowered



- Effective utilization of community resources
- Engaging the community partner



- Seamless stroke care (especially community phase)
- The growing demand is better managed





# Conclusion

**Pilot collaboration between TWEH/ HOH stroke rehabilitation is a feasible model in the provision of rehabilitation in the community**

**It could improve health outcomes, provide community integration, while the growing demand is better managed**

# Acknowledgement

東華東院 –  
綜合社區復康中心

TWEH – ICRC



Dr. LEUNG Kei Pui  
Dr. LEUNG Kai Chi  
Ms. Choi Rita  
Mr. LIU Alan  
Mr. WONG Eric  
Ms. TANG Siu Wai  
Ms. CHAN Po San



基督教靈實協會 –  
靈實日間社區康復中心

HOH CRDC



Ms. WO Candy  
Mr. Yip Colin



東華三院  
Tung Wah Group of Hospitals

140  
TWGHs 140th Anniversary  
東華三院一百四十周年