



Collaborative Multidisciplinary Approach to Enhance Quality Care for Chronic Obstructive Pulmonary Disease (COPD) Patients in Primary Care



Presented By:
Dr. Lorna NG,
KWH Family Medicine
Coordinator/SMO(FM & OPD)



Collaborative Multidisciplinary

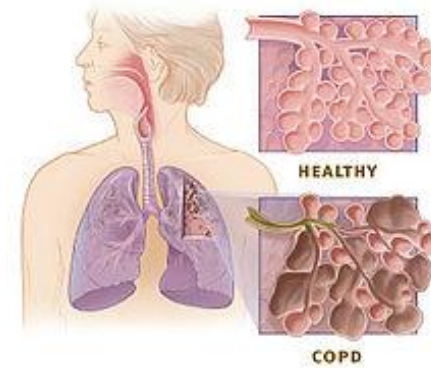


- **Chronic obstructive Pulmonary disease (COPD), a major cause of chronic morbidity and mortality throughout the world, represents a major public health challenge.**
- **5th leading cause of death in Hong Kong.**
- **COPD is characterised by lung function impairment and disease deterioration leading to loss in quality of life.**
- **COPD patients may develop low self efficacy which contributes to their activity avoidance or restriction.**

Case Scenario

Mr. Wong

- 68 years of age , Male, retired clerk
- Ex-smoker, smoked for 50 years, about 10.5 packs of cigarettes per week
- Presented with progressive dyspnea and productive cough
- Lung function test confirmed chronic obstructive airway disease : FEV1/ FVC-62.5%
- FEV1-52% predicted (GOLD stage 2-moderate)
- Bronchodilator reversibility test negative
- On conventional medical treatment consisting of inhaled bronchodilator at KWH General Out-Patient Clinic



Case Scenario

- **Still complains of shortness of breath on exertion despite medications and regular follow-up at our clinic**
- **Modified MRC dyspnea scale (0-4) : grade 2 (walk slower than same age on level ground)**
- **Exercise tolerance-1 flight of stairs only**
- **Lives in public housing estate with lift landing at home**
- **Cared by daughter**
- **Good psychosocial support**





**What can we do to help improve
Mr Wong's condition ?**

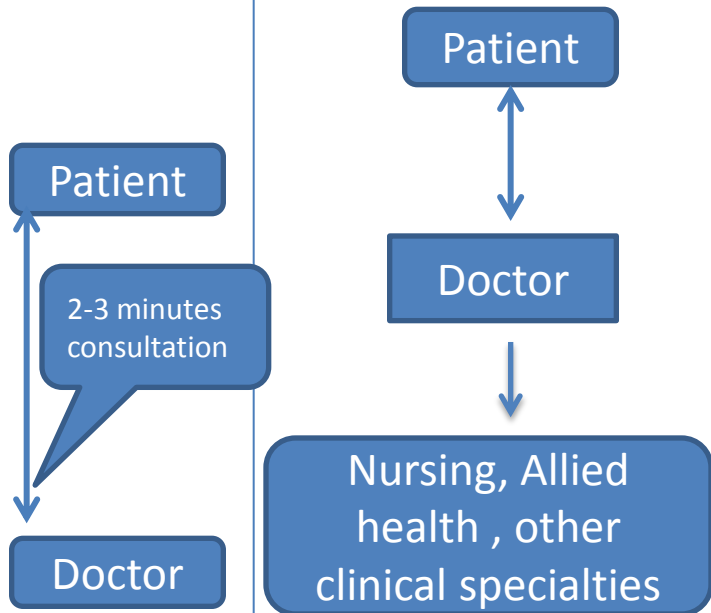


JOURNEY OF COPD MANAGEMENT IN A HK PUBLIC PRIMARY CARE SETTING (KWH GOPD/FM)

HK PRIMARY CARE REFORM



COLLABORATIVE MULTIDISCIPLINARY APPROACH



Structured, well-coordinated program involving medical, nursing and allied health professionals

Collaborative Multi-disciplinary Approach in COPD Management

- Structured program involving doctors, nurses and physiotherapists with effective communication channels
- Includes pulmonary rehabilitation with goal setting for individual patient and tailor made home program
- Smoke cessation counselling referrals to HA SCCCs and in collaboration with NGO (TWGH ISCC)



Collaborative Multi-disciplinary approach in COPD Management

- **Emphasis on patient self-management : understanding of disease and medication usage; competence and good compliance in using medications, and management of acute exacerbation**



Collaborative Multi-disciplinary approach in COPD Management

- Enhance Patient empowerment and holistic Patient-Care with health promotion activities, Fun Day, Patient sharing, Patient achievement recognition and collaboration with community partners e.g NGOs



Pulmonary Rehabilitation Program

- Pulmonary rehabilitation is a multidisciplinary intervention which can minimize and delay losses associated with progression of COPD.
- Pulmonary rehabilitation which incorporates strategies to empower individual's self efficacy and exercise adherence, could improve health outcomes for patients with COPD.



Pulmonary Rehabilitation Program

- **Structure**

- Two sessions per week for 6 consecutive weeks
- Goal setting and tailor made according to patient's condition & progress
- Includes
 - **Aerobic training**
 - UL & LL cycling exercises
 - Treadmill exercise
 - **Home exercise**
 - Theraband exercises
 - Tai Chi



Pulmonary Rehabilitation Program

- Tai Chi
 - Pioneer to add Tai Chi to PRP in HK
 - Mainly 4 forms
 - 太極起式, 雲手, 單鞭, 如封似閉
 - Modified Master Suen's Style
 - focuses on breathing control, limbs movement, trunk rotation & weight shifting
 - Tailor made
 - e.g. Practice in sitting for patient with LL disability



Outcome Measurements

-Physiological status and Exercise Capacity :



















Lung function Parameters, 6 minute walking tests (6MWD) , Borg scale for perceived dyspnea

-Health Status Measurement :

Validated Chinese version of St George Respiratory Questionnaire (SGRQ-HKC)

-Self Efficacy Outcome:

COPD self efficacy scale (CSES), Self efficacy for managing shortness of breath (SEMSOB)

	Physiologic and functional exercise capacity			Health Status	Self Efficacy Outcome	
	Lung function tests	6MWD	Borg scale	SGRQ	CSES	SEMSOB
Baseline	+ bronchodilator reversibility test 					
2 months (post- intervention)						
6 months (post- intervention)						

Outcome Measures :

Physiologic Status and Exercise Capacity:

- **Lung function Parameters :**
 - **Spirometric parameters : FEV1; FVC; FEV1% pred**
- **Exercise Capacity and Breathlessness :**
 - **6 Minute Walking Test (6MWT) :**
 - **measure of functional exercise capacity**
 - **self-paced distance that a patient could quickly walk on a flat, hard surface in a period of 6 minutes.**
 - **Borg Scale for Perceived dyspnea and fatigue :**
 - **Self-rated 10 point scale for perceived SOB and fatigue with “0” representing no SOB and “10” maximal shortness of breath**
 - **Oxygen saturation (SaO2%) :**
 - **Pre and post 6 minutes MWT SaO2% and Heart rate were measured using pulse oximetry**

Health Related Quality of Life Outcomes:

- **Saint George Respiratory Questionnaire SGRQ-HKC (Validated Chinese version)** - designed to measure health impairment in patients with COPD.
 - *Part 1:*
 - **Symptoms score : distress caused by respiratory symptoms**
 - *Part 2:*
 - **Activity score: measures disturbances to patients daily physical activity**
 - **Impact score: whole range of social and psychosocial effects of COPD**
- **Scored from 0 to 100**
- **An increase in score indicates worsening health status**

Self efficacy outcomes

- **COPD self efficacy scale (CSES) (Wigal et al 1991)**
 - 34 item questionnaire measuring a person's confidence in managing or avoiding breathing difficulties in certain situations
 - using Likert scale from 1 to 5 with 5 representing " most confident"
 - rating score was used in the analysis as some items were considered non-applicable in some cases.
 - The higher the rating score the greater self efficacy
- **Self efficacy for managing shortness of breath (SEMSOB) (Lorig et al 1996;Davis et al 2006)**
 - Single question instrument that measures patient's overall confidence in keeping SOB from interfering with what they want to do
 - Score 1 to 10, with a higher score indicating greater self efficacy

- **This Collaborative Multi-disciplinary Team Approach to COPD management including pulmonary rehabilitation has been carried out from January 2011-September 2012 in KWH GOPC/FM Clinic**
- **192 clinically diagnosed COPD confirmed with baseline spirometry + bronchodilator reversibility tests participated.**
- **138 successfully completed the this program including 6 months post-intervention follow-up.**

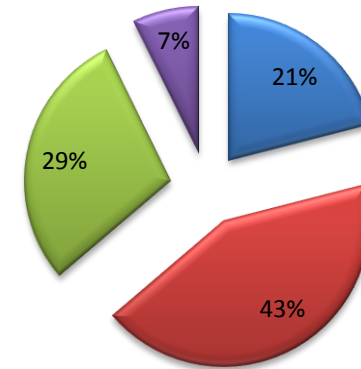


Demographic data

Variable	Total n= 138
Age (year): Mean (SD)	74.2 (6.5)
Gender:	
Male (%)	124 (89.9%)
Female (%)	14 (10.1%)
BMI: Mean (SD)	23.2 (4.6)
Education	
Illiteracy (%)	22 (15.9%)
Primary (%)	4 (2.9%)
Secondary (%)	76 (55.1%)
Tertiary or above (%)	36 (26.1%)
Employment	
Retired (%)	129 (93.5%)
Part-time (%)	4 (2.9%)
Full-time (%)	5 (3.6%)
Lift-landing at home	124 (89.95%)
Smoking	
Non-smoker (%)	1 (0.7%)
Ex-smoker (%)	103 (74.6%)
Current-smoker (%)	34 (24.6%)
Packs per year: Mean (SD)	42.6 (32.1)
How many years quit: Mean (SD)	8.3 (10.4)
Oxygen need	
Do not need (%)	132 (95.7%)
Activities only (%)	3 (2.2%)
At night only (%)	1 (0.7%)
Continuous use (%)	2 (1.4%)
Live with:	
Alone (%)	114 (82.6%)
Family (%)	24 (17.4%)
Stage of COPD:	
Mild (%)	29(21%)
Moderate (%)	59(42.8%)
Severe (%)	40(29%)
Very Severe (%)	10 (7.2%)
Having Co-existing disease (%)	86 (62.3%)
No co-existing disease (%)	52 (37.7%)

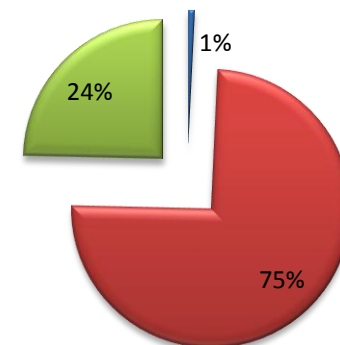
Stage of COPD

■ Mild (%) ■ Moderate (%) ■ Severe (%) ■ Very Severe (%)



Smoking

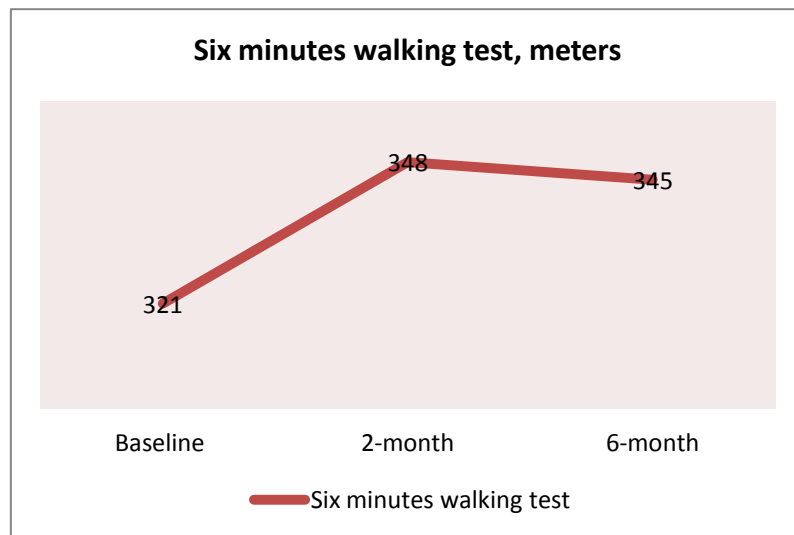
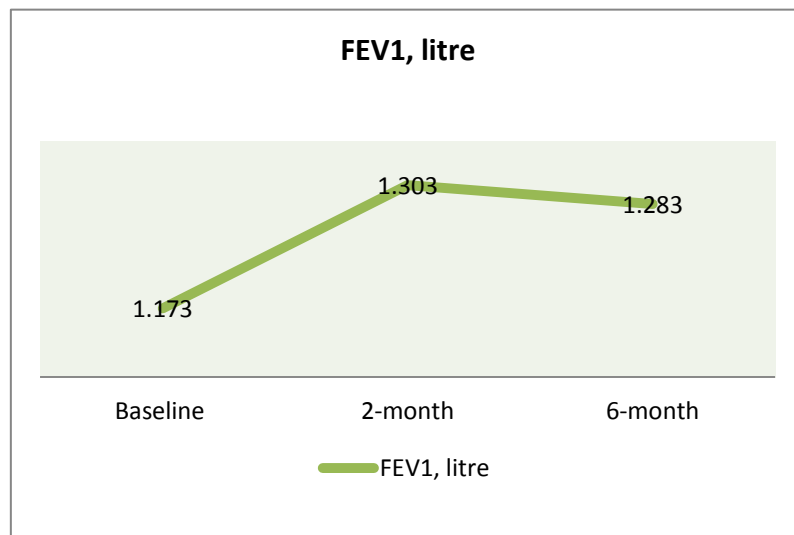
■ Non-smoker (%) ■ Ex-smoker (%) ■ Current-smoker (%)



RESULTS: Physiological Status and Exercise Capacity

at baseline, 2nd month and 6th month using Paired T-test

Outcomes		Mean	SD	P-Value
FVC, litre	Baseline	2.132	0.694	
	2-month	2.284	0.856	0.015*
	6-month	2.220	0.723	0.092
FEV ₁ , litre	Baseline	1.173	0.441	
	2-month	1.303	0.538	0.000 *
	6-month	1.283	0.519	0.001 *
Six minutes walking test, meters	Baseline	320.558	89.010	
	2-month	348.188	72.817	0.000 *
	6-month	344.754	72.904	0.000 *
Borg Dyspnoea post 6MWT	Baseline	0.583	1.063	
	2-month	0.616	1.004	0.510
	6-month	0.514	0.912	0.105
SaO ₂ %, post 6MWT,	Baseline	93.486	3.707	
	2-month	93.638	3.064	0.311
	6-month	93.993	2.916	0.001 *

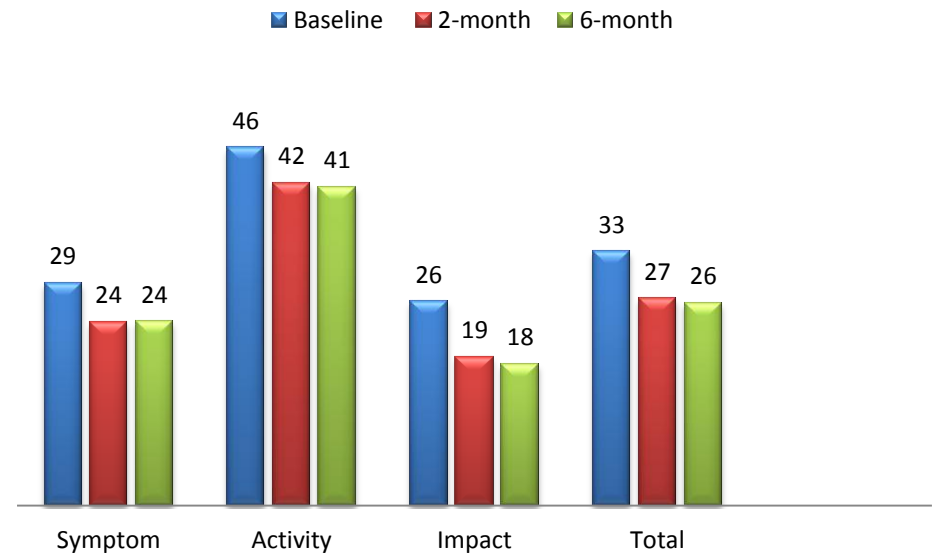


RESULTS: Health Status using SGRQ-HKC

at baseline, 2nd month and 6th month using Paired T-test

Outcomes		Mean	SD	P-Value
SGRQ HKC-Symptom	Baseline	28.803	20.694	
	2-month	23.718	19.166	0.000 *
	6-month	23.815	20.425	0.002 *
SGRQ HKC-Activity	Baseline	46.268	23.523	
	2-month	41.756	22.854	0.000 *
	6-month	41.235	21.139	0.005 *
SGRQ HKC-Impact	Baseline	26.417	18.998	
	2-month	19.217	16.212	0.000 *
	6-month	18.292	18.855	0.000 *
SGRQ HKC-Total	Baseline	32.830	19.091	
	2-month	26.795	16.787	0.000 *
	6-month	26.163	18.096	0.000 *

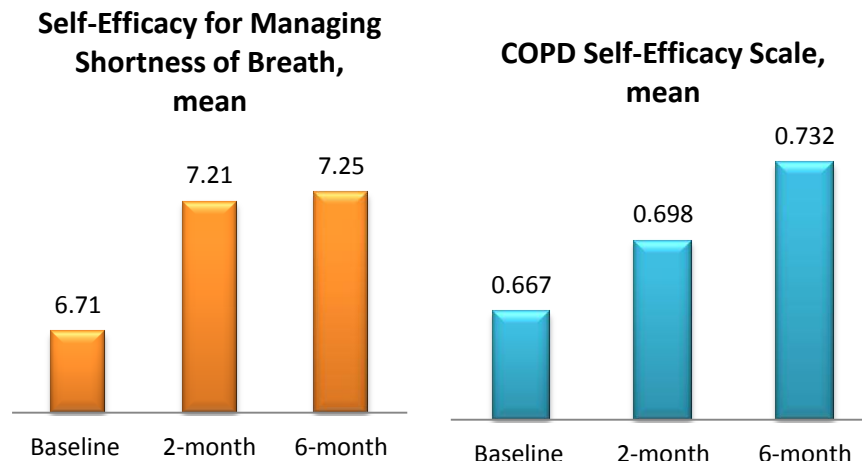
SGRQ-HKC St. George's Respiratory Questionnaire-Hong Kong Chinese version



RESULTS: Self-Efficacy Outcomes

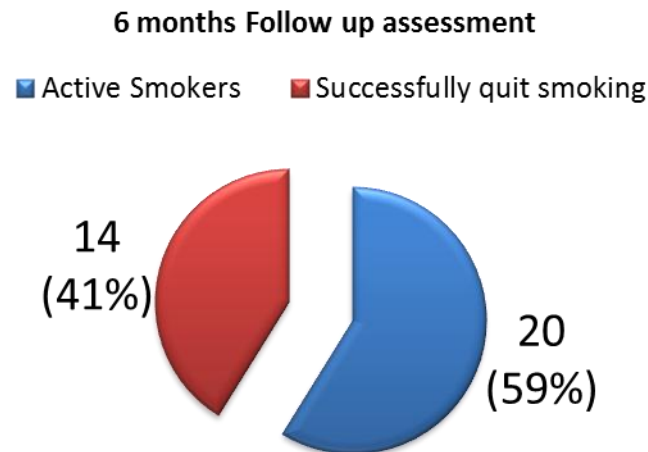
at baseline, 2nd month and 6th month using Paired T-test

Outcomes		Mean	SD	P-Value
SEMSOB	Baseline	6.710	2.176	
	2-month	7.210	1.794	0.000 *
	6-month	7.246	1.775	0.004 *
CSES	Baseline	0.667	0.158	
	2-month	0.698	0.145	0.000 *
	6-month	0.732	0.127	0.000 *



RESULTS: Smoke Cessation Outcomes

Outcomes		Number	%
Baseline	Active smoker	34	24.6%
	Ex-smoker	103	74.6%
	Non-smoker	1	0.7%
6-month FU assessment	Active smoker	20	14.5%
	Ex-smoker	117	84.8%
	Non-smoker	1	0.7%



Conclusion

- Multidisciplinary approach in COPD management, including pulmonary rehabilitation programme, which involves mainly doctors, nurses and physiotherapists, is crucial in improving health outcomes of COPD patients in primary care
- A primary care provider/Family Physician can play an important role in providing well coordinated care with the clinical team to deliver comprehensive and continuing health service to the patients



Conclusion

- An effective communication channel among health care professionals can enhance patient care
- Emphasis on Patient-centered care and Patient empowerment with education on general aspects of the disease , training of coping skills, self-management techniques and enhancement of exercise adherence are beneficial.





THANK YOU

to KWh Primary Care Team

KWh FM/GOPD

KWh Department of Physiotherapy

