Improving early detection of Chronic Obstructive Pulmonary Disease in Kowloon Central Cluster Primary Health Service: the role of Nurse and Allied Health Clinic-Respiratory
World Health Assembly resolution 53.17

The 53rd World Health Assembly

- recognized the enormous human suffering caused by chronic respiratory diseases (CRDs)
- and requested the WHO Director General to continue giving priority to the prevention and control of CRDs
- with special emphasis on developing countries and other deprived populations

WHA resolution 53.17, May 2000
endorsed by all 191 WHO Member States
Global Distribution – Chronic Disease Mortality: All ages, 2005

Source: Preventing Chronic Diseases, a vital investment, WHO, 2005
# Increasing Burden of Diseases and Injuries: Change in Rank Order of DALYs*

<table>
<thead>
<tr>
<th>1999</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acute lower respiratory infections</td>
<td>1. Ischemic heart disease</td>
</tr>
<tr>
<td>2. HIV/AIDS</td>
<td>2. Unipolar major depression</td>
</tr>
<tr>
<td>3. Perinatal conditions</td>
<td>3. Road traffic injuries</td>
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<tr>
<td>4. Diarrhoeal diseases</td>
<td>4. Cerebrovascular disease</td>
</tr>
<tr>
<td>5. Unipolar major depression</td>
<td>5. COPD</td>
</tr>
<tr>
<td>6. Ischemic heart disease</td>
<td>6. Acute lower respiratory infections</td>
</tr>
<tr>
<td>7. Cerebrovascular disease</td>
<td>7. Tuberculosis</td>
</tr>
<tr>
<td>8. Malaria</td>
<td>8. War</td>
</tr>
<tr>
<td>9. Road traffic injuries</td>
<td>9. Diarrhoeal diseases</td>
</tr>
<tr>
<td>10. COPD</td>
<td>10. HIV</td>
</tr>
<tr>
<td>11. Congenital abnormalities</td>
<td>15. Trachea, bronchus, lung cancers</td>
</tr>
<tr>
<td>12. Tuberculosis</td>
<td></td>
</tr>
</tbody>
</table>

*DALY = Disability-adjusted life year

Source: WHO Evidence, Information and Policy, 2000
COPD in Hong Kong

• Burden of COPD
• There is a rising trend in the global incidence of COPD. The WHO estimated the disease will be the 5th commonest disease and the no. 3 killer in the world by 2020.

• Although the exact prevalence of the disease is not known in Hong Kong, a local study suggested 9% of the elderly above the age of 70 are its victim. From statistics of the Hospital Authority, COPD was the cause of 4% of all urgent hospital admissions in 1997 and contributed 5.8% of all deaths in the same year.

Hong Kong Lung Foundation
## Service Priorities for 2011-12

<table>
<thead>
<tr>
<th>Strategic Service Plan</th>
<th>Annual Plan enHAncing Health</th>
<th>Service Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Intent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better able to manage growing demand</td>
<td>Modest increase in service capacity to meet growing demand in priority areas</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Direction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase capacity</td>
<td>Enhance primary care and optimise chronic disease management</td>
<td></td>
</tr>
<tr>
<td>Keep people healthy</td>
<td>Enhance ambulatory and community care to prevent avoidable hospitalisation</td>
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</tr>
<tr>
<td>Divert demand</td>
<td>Develop public-private partnership (PPP)</td>
<td></td>
</tr>
</tbody>
</table>
## Service Priorities for 2011-12 (cont’d)

<table>
<thead>
<tr>
<th>Strategic Service Plan</th>
<th>Annual Plan enHAnencing Health</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Intent</strong></td>
<td><strong>Service Priorities</strong></td>
</tr>
<tr>
<td>Better service quality and safer services</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Direction</strong></td>
<td>Do no harm</td>
</tr>
<tr>
<td></td>
<td>Strengthen safety culture and risk management</td>
</tr>
<tr>
<td></td>
<td>Enhance quality systems and clinical governance</td>
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<td></td>
<td>Reconfigure services and promote timely intervention</td>
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<tr>
<td></td>
<td>Introduce new technologies and treatment options with proven cost-benefit</td>
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<tr>
<td></td>
<td>Update medical equipment &amp; capital facilities with additional investment</td>
</tr>
<tr>
<td></td>
<td>Continue to develop IT programmes and patient electronic health record system</td>
</tr>
<tr>
<td></td>
<td>Modernise service planning mechanisms</td>
</tr>
</tbody>
</table>
COPD: Reality

Under

- diagnosed
- perceived
- treated
跨專業治理 - 胸肺復康服務
NAHC - Respiratory Care
NAHC – Respiratory

• Date of Service Implementation
  – 21-9-2009

• Settings & Days of Service
  – CKGOPC (Mon.)
  – YMTGOPC (Tue. & Fri.)
  – LKMD (Wed. & Thu.)

• Staffing
  – Doctors, Nurse, Physiotherapist, Occupational therapist
1. Assess and monitor disease

2. Reduce risk factors

3. Manage stable COPD
   - Education
   - Pharmacologic
   - Non-pharmacologic

4. Manage exacerbations
Intake assessment: Diagnosis of COPD

• Standardized initial assessment protocols (CRF)
• Nurses, Physiotherapists and Occupational therapists
• Patients will be risk stratified according to:
  – History
  – Spirometry
  – BODE
  – Modified Medical Research Council (MMRC) Dyspnoea Scale
COPD detection

- FEV1/FVC < 0.7
- Total number of patient: 1800
- No. of Patient with Known COPD: 290
- COPD detection rate: 413 (26.5%)
COPD risk and smoking cessation

Patient decrease smoking

- Intake
- 6 Month
- 12 Month

COPD smoker
COPD patient stop smoking during follow up
Screen patient with smoking
Screen patient stop smoking in follow up
Self Management

Brief Pulmonary rehabilitation

Case Management

Self management

Brief pulmonary rehabilitation

Case management

- Motivated CLD patients
- FEV1 36-80% and / or
- MMRC: 0-1 and / or
- 6MWT >= 350 m
- individual and small group
- Enhance patient empowerment
- Improve the capability on self care Dealing with acute exacerbation

- CLD patient with functional impairment
- FEV1 36-80% and / or
- 6MWT <= 349 m or
- 6MWT >= 350 m and MMRC: 2-3
- Group (4 – 6)
- To improve function
- -QOL
- -Cultivate exercise habit

- CLD patient repeat AED attendance
- FEV1<=35% and / or
- MMRC : 4
- action plan for acute exacerbation
- ± post-discharge home program
# Improvement in functional ability

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Intake</th>
<th>Discharge from Program</th>
<th>6 M Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>COPD Pt attend program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEV1 (%)</td>
<td>58.60</td>
<td>58.97</td>
<td>59.39</td>
</tr>
<tr>
<td>MRC Dyspnea Score</td>
<td>1.27</td>
<td>0.94</td>
<td>0.97</td>
</tr>
<tr>
<td>6 MWT (m)</td>
<td>349.56</td>
<td>366.93</td>
<td>389.53</td>
</tr>
<tr>
<td>BODE index</td>
<td>2.38</td>
<td>1.91</td>
<td>1.96</td>
</tr>
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Significant with p < 0.001 with paired t test
Evaluation of Quality of Care NAHC-Respiratory – HKU

- 20.7% current smokers quit smoking at 12m FU (target – 20%)

- 71.6% COPD patients with functional impairment improved in 6MWT at 6m FU

- 69% COPD patients had flu vaccination at 12m FU (target – 30%)

- 23.6% COPD patients with functional impairment improved in MMRC Dyspnoea scale at 6m FU

- 21.2% new COPD detection rate in chronic smokers

The observed standards of **structure of care** have reached targets in all quality criteria.

The observed standards of **process of care** have reached targets in most of the criteria.

The **outcomes of care** satisfactory as shown here.
It appears that in general patients are quite satisfied with the various aspects (communication, accessibility, technical quality) of the Respiratory Disease Management program.
Preventing CHRONIC DISEASES
a vital investment

saving 36,000,000 lives by 2015

World Health Organization
Primary vs. Secondary COPD Care

Early detection of COPD

Easy to access
- 3 GOPCs in KCC (YMTJCC, LKMD, CKHC)

Under-detection 2000-2003 Lung Function Research HK
100,000 patient diagnosis with moderate stage (without treatment)

Hospital Base

Primary Health Service
To the COPD patient, this is a breathtaking view.

Early Diagnosis
Early Intervention

NAHC
Enhance Health
# Team Members

<table>
<thead>
<tr>
<th>Doctor</th>
<th>Nurse</th>
<th>PT</th>
<th>OT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. King Chan</td>
<td>Dr. Sandy Chan</td>
<td>Dr. Polly Lau</td>
<td>Dr. Serena Cheng</td>
</tr>
<tr>
<td>Dr. David Chan</td>
<td>Ms. Chan L H</td>
<td>Mr. David Yu</td>
<td>Dr. Bobby Ng</td>
</tr>
<tr>
<td>Ms. Phoebe Lai</td>
<td>Mr. Desmond Lee</td>
<td>Ms. Fung M L</td>
<td></td>
</tr>
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GOPC SOPC FM Colleagues

Thank You