

COMMUNITY CARE: A TEAM BASED APPROACH TO MANAGING CHRONIC LUNG DISEASE

Dr Gerald Chua

ABSTRACT

Patients with COPD represent the ideal target population which stands to benefit from the Integrated Care Pathway (ICP) model of care. They are generally older and many suffer comorbid conditions which share common causative links to cigarette smoking. Hence their combined medical and social complexities represent a great challenge for the solo physician, whether in specialty or primary care, to deliver care comprehensively, consistently and efficiently. Effective management of patients with COPD thus requires the co-ordinated efforts of the hospital and the community to integrate care across the care continuum. In the COPD ICP Team approach, the execution of care is based on 5 interdependent tenets: (1) Every patient has a primary care physician; (2) Every patient's care should be delivered as a set, rather than individual components; (3) Every patient has a single health record; (4) Every care process must represent value to the patient; (5) Every patient must be helped to navigate care, and supported to remain in care. Of note is the care is supported by care managers, communication links for tracking response to therapy, IT support, and equipment support.

Keywords:

Integrated Care Pathway (ICP), care manager, co-ordinated care, comprehensive care, consistent care, efficient care, single health record

SFP2013; 39(2): 25-29

INTRODUCTIONCONCLUSION

MOH has identified COPD as one of 5 disease conditions amenable to intervention via an integrated care pathway (ICP). In 2010, COPD was the 7th principal cause of death in Singapore with about 440 deaths. COPD was also the 7th most common condition for hospitalisation with more than 10,000 admissions in 2010.

THE INTEGRATED CARE PATHWAY

Patients with COPD represent the ideal target population which stands to benefit from the ICP model of care. They are generally older and many suffer comorbid conditions which share common causative links to cigarette smoking. Hence their combined medical and social complexities represent a great challenge for the solo physician, whether in specialty or primary care, to deliver care comprehensively, consistently and efficiently.

GERALD CHUA

Head, Department of Medicine, Alexandra Hospital (JurongHealth)

FIGURE 1: WHAT IS AN INTEGRATED CARE PATHWAY?

Deliberately planned processes whereby

- medical interventions,
 - services and
 - the people that provide them
- are wrapped around patients, such that the patients' needs are met in a
- cost-effective and
 - hassle-free manner, regardless of the
 - disease severity and
 - location in the regional health system they first present to.

The key care elements of the COPD ICP are listed in Figure 2. To deliver the comprehensive care encompassed by the elements, an inter-professional team approach is needed. The team comprises respiratory medicine physicians, primary care physicians, case managers, smoking cessation counselors, physiotherapists, lung function lab technologists, medical social workers, and palliative care practitioners.

THE COPD ICP TEAM APPROACH

JurongHealth's team approach to the execution of care for our COPD patients is based on the 5 interdependent tenets. See Figure 3.

(1) Every patient has a primary care physician

In today's practice environment, the care of COPD patients is fragmented and uncoordinated, and results in safety risks and waste. A large portion of COPD patients, when in the early stages of disease, either remain undiagnosed or fail to receive consistent care; at the time they present to our hospital systems, usually during a moderate to severe acute exacerbation needing an inpatient stay, they have progressed to advanced disease (Group C & D), and will henceforth remain in specialty care. See Figure 4.

The COPD ICP attempts to address this problem by ensuring that all COPD patients have a primary care physician (PCP). For patients who are detected in primary care, we support their PCP's with direct access spirometry which is reported with a turnaround time of 1 hour, CAT scoring to aid classification, and a recommended set of interventions, based on the disease classification. See Figure 5.

For patients who are detected by the hospital system or specialty care, we aim to optimise the disease control in an expedient manner using a multi-faceted approach with the available resources in hospital based practice. Once our patients are in a

FIGURE 2: KEY CARE ELEMENTS OF THE COPD ICP

| S/n | Key Elements of Care | Standards |
|-----|---|--|
| 1 | Smoking prevention | People with COPD should be assessed for smoking status and advised not to take up smoking or avoid exposure to cigarette smoke. |
| 2 | Smoking cessation | People with COPD who smoke should be encouraged to stop and offered help to do so through smoking cessation counselling and programme. |
| 3 | Differential diagnosis | People with COPD should have appropriate investigations (e.g. at least one radiology assessment) to rule out other underlying lung conditions or alternative diagnosis. |
| 4 | Spirometry diagnosis | People with COPD should receive spirometry testing for diagnosis (new cases) |
| 5 | Patient education | People with COPD should be provided with education and counselling, including on inhaler technique and action plans for exacerbation and self-management. |
| 6 | Drug optimisation | People with COPD should have appropriate pharmacotherapy initiated. |
| 7 | Influenza vaccination | People with COPD should be offered influenza vaccination annually. |
| 8 | BMI assessment | People with COPD should have their BMI assessed annually. |
| 9 | Pulmonary rehabilitation | People with COPD, meeting appropriate criteria, are offered an effective pulmonary rehabilitation programme. |
| 10 | COPD Assessment Tool (CAT) | People with COPD should be assessed with CAT at every visit or minimum twice a year. |
| 11 | Acute ventilation (Non-invasive/ Invasive) | <ul style="list-style-type: none"> People with COPD at severe exacerbation should be considered for prompt Non-Invasive Positive Pressure Ventilation (NIPPV) treatment in a structured programme regardless of NIV consideration. People with COPD exacerbations with worsening conditions (i.e. severe dyspnoea, hypoxemia, hypercapnia and respiratory acidosis) that fail to respond to initial emergency therapy should be considered for integration to ICU/ MICU. |
| 12 | Supported Restructured Hospital/ Emergency Department discharge | <ul style="list-style-type: none"> People with COPD exacerbations should be managed with care paths in the emergency department and the inpatient setting, which should include provisions for direct discharge to home supported care (if clinically appropriate). People with COPD admitted for exacerbations should have discharge plans discussed with care coordinator/ COPD nurse, with proactive follow-up. |
| 13 | Home Oxygen | People with COPD should have home-based Long term Oxygen Therapy initiated, if indicated. Long Term Oxygen Therapy should be initiated by a specialist. |
| 14 | Advanced Care Planning | People with COPD at Stage III and IV should have advanced care planning initiated, if indicated. |

FIGURE 3. INTERDEPENDENT TENETS IN COPD ICP TEAM APPROACH

- (1) Every patient has a primary care physician
- (2) Every patient's care should be delivered as a set, rather than individual components
- (3) Every patient has a single health record
- (4) Every care process must represent value to the patient
- (5) Every patient must be helped to navigate care, and supported to remain in care

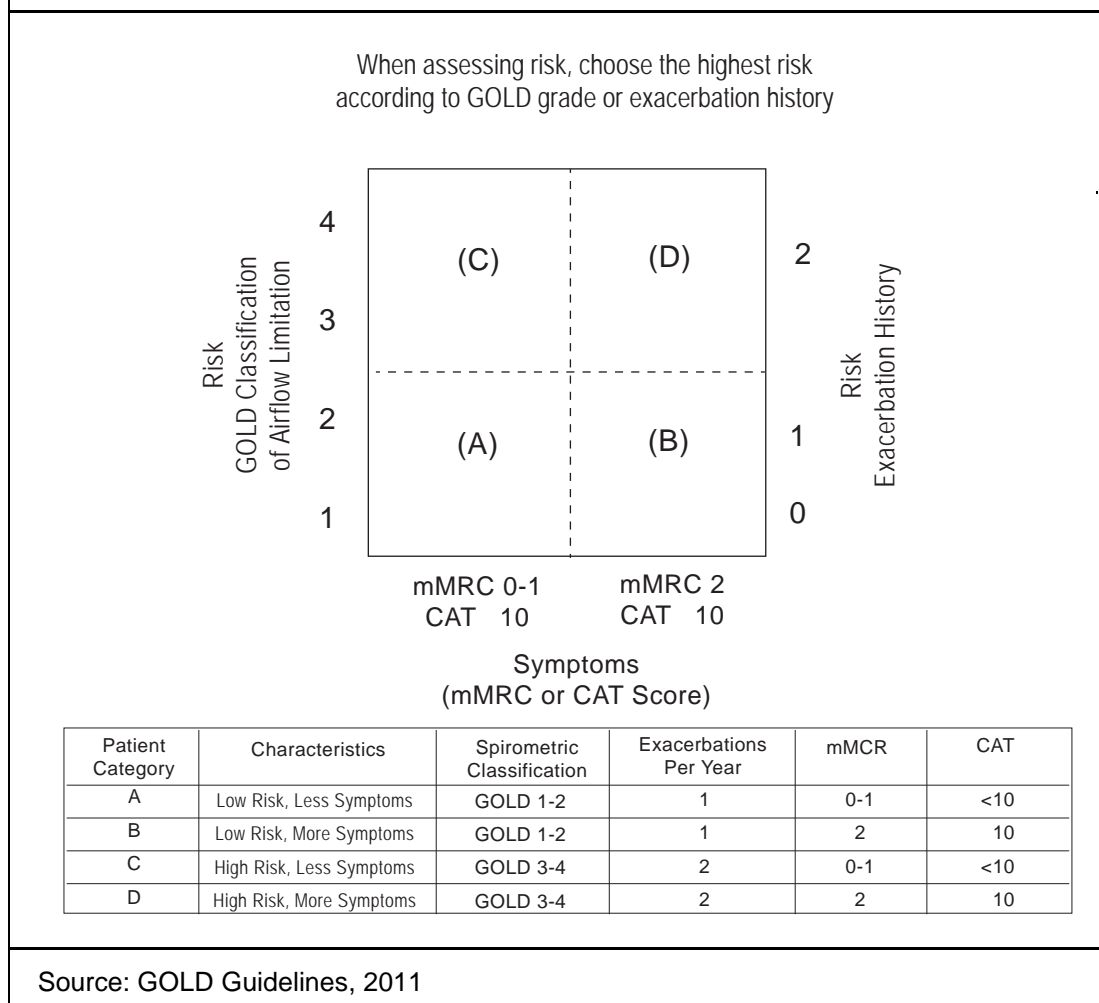
stable phase of the disease, we initiate a system of shared care with our PCP partners. A typical COPD patient in a stable phase of illness today is seen 3 to 4 times a year by hospital based specialty care. We target to share the care of these patients such that 1 to 2 of these visits remains with specialty care, with the balance of 2 to 3 visits with a regular PCP.

(2) Every patient's care should be delivered as a set, rather than individual components

To ensure quality and consistency of care both at specialty and

primary care, care bundles have been devised for each COPD group. Every element in the bundles has good evidence behind its efficacy, but when delivered collectively the resultant effectiveness is believed to be greater than the summation of the effectiveness of each individual intervention.

Consistent and complete adherence to the bundles is a big challenge for physicians working alone. The team approach greatly enhances bundle adherence, through shared responsibilities and the appropriate delegation of tasks to

FIGURE 4. GOLD 2011 CLASSIFICATION OF COPD

members of the healthcare team empowered to work at the top of their license. Automated prompts when care gaps are identified and pre-programmed order sets, when incorporated into the electronic health record (EHR), can assist all members of the team to deliver each element in the bundle to every patient, every time.

(3) Every patient has a single health record

In the practice environment of today, a COPD patient's clinical data may reside in several electronic databases, which at best only interface (rather than integrate) with each other. Even when on follow-up in restructured hospital based specialty care, important information is often not captured electronically and made visible to other members in the team. What results in duplication of care and gaps in care, leading to waste - inefficiencies, unnecessary costs - and risk - compromise of patient safety.

While cognizant that health IT projects are not inexpensive and require many man-hours to ensure robust ground implementation, we strongly believe that the investment will ultimately pay off for our COPD patients. Towards this end we

are working to develop an IT platform that will integrate information from specialty care, primary care, case management, pharmacy, pulmonary rehabilitation, smoking cessation services, medical social services, advanced care planning, and palliative care (when applicable). Such a platform will aid the subsequent genesis of a COPD patient registry, from which data can be mined for health services and outcomes research (HSOR) to enhance or upscale current services, and anticipate future trends and needs.

(4) Every care process must represent value to the patient

In the process of designing the ICP, the team critically examined preexisting processes in both the hospital and community sites. We eliminated steps in the care process which added to supply-chain costs but did not make care safer, more reliable or more accessible. An example of this is the provision of spirometry and smoking cessation counseling services in the community. Both these services, while essential for the management of COPD patients in the early stages of disease, were not within direct access of private practice PCP. Obtaining these services for their patients necessitated a referral to hospital-based specialty care. These additional steps in the care

process represented no value to the patient and their PCP, and acted as barriers to doing what was right. The opportunity to intervene on COPD patients in the early stages was lost: suspected patients remained unconfirmed, and smokers did not receive the expert help they needed to stop / reduce their cigarette smoke exposure.

We thus eliminated the necessary step of a specialty care referral for spirometry and smoking cessation. We also made these services available in a community site, thus reducing as best as possible the physical and logistic barriers to access. Spirometry was performed, read remotely by specialists, and if abnormal and confirmatory of expiratory airflow limitation not acutely reversible by bronchodilators, case managers on site would perform the CAT score, classify the patient's COPD, offer smoking cessation advice (if relevant), extract the key care elements required and submit all the information and recommendations back to the referring PCP. The case managers adhered to pre-defined ICP workflows, and were guided by off-site specialists. This represented an innovative model of respiratory care in Singapore, in which steps which added no value were eliminated, and steps that remained were appropriately delegated, automated and integrated into a workflow that ensured care was safe, reliable and appropriate at every step. See Figure 6.

(5) Every patient must be helped to navigate care, and supported to remain in care

COPD patients often need help to navigate the myriad of services that their physicians prescribe, and their age and comorbidities pose additional complexities. Many healthcare systems overseas have found that case management is the solution to overcome this. The team-approach to COPD ICP implementation is anchored by case managers. All qualified staff nurses, our team of case managers form that crucial link between patients and their PCP, specialists, MSW's, physiotherapists and smoking cessation counselors.

The support that case managers provide our COPD patients include

- Scheduled telephonic contact with patients 2 days and 1 week post hospital discharge
- Ad-hoc telephonic advice on execution of action plans previously prescribed by physicians
- Liaising with durable medical equipment providers for supply of home oxygen, home nebulizers
- Checking of inhaler technique during physician visits
- Telephonic tracking of response to therapy using serial CAT scores, and flagging patients for expedited physician review and early intervention when needed

FIGURE 5. CAT SCORING FOR COPD

| | | SCORE | | | | | |
|---|-------------|--|--------------------|--|--|--|--|
| I never cough | 0 1 2 3 4 5 | I cough all the time | | | | | |
| I have no phlegm (mucus) in my chest at all | 0 1 2 3 4 5 | My chest is completely full of phlegm (mucus) | | | | | |
| My chest does not feel tight at all | 0 1 2 3 4 5 | My chest feels very tight | | | | | |
| When I walk up a hill or one flight of stairs I am not breathless | 0 1 2 3 4 5 | When I walk up a hill or one flight of stairs I am very breathless | | | | | |
| I am not limited doing any activities at home | 0 1 2 3 4 5 | I am very limited doing activities at home | | | | | |
| I am confident leaving my home despite my lung condition | 0 1 2 3 4 5 | I am not at all confident leaving my home because of my lung condition | | | | | |
| I sleep soundly | 0 1 2 3 4 5 | I don't sleep soundly because of my lung condition | | | | | |
| I have lots of energy | 0 1 2 3 4 5 | I have no energy at all | | | | | |
| <small>COPD Assessment Test and the CAT logo are trademarks of the GlaxoSmithKline group of companies. © 2009 GlaxoSmithKline. All rights reserved.</small> | | | TOTAL SCORE | | | | |

FIGURE 6: CARE BUNDLES FOR COPD GROUPS A, B, C & D

| Key Care Elements | At risk | Group A | Group B | Group C | Group D | In exacerbation |
|---|---------|--|-------------------------|--------------------------|--------------------------|---------------------------------------|
| | | Low risk, less symptoms | Low risk, more symptoms | High risk, less symptoms | High risk, more symptoms | |
| 1. Smoking prevention | √ | | | | | |
| 2. Smoking cessation | √ | √ | √ | √ | √ | |
| 3. Differential diagnosis | √ | | | | | |
| 4. Spirometric diagnosis | √ | 18-24mthly or when clinician suspects patient grouping has changed | | | | |
| 5. Patient education | | √ | √ | √ | √ | |
| 6. Drug optimisation | | √ | √ | √ | √ | √ (refer to pharmacotherapy table) |
| 7. Influenza vaccination (yearly) | | Only for Elderly (≥ 65 years old) & those with concomitant heart disease | √ | √ | √ | |
| 8. BMI assessment (yearly) | | √ | √ | √ | √ | |
| 9. Pulmonary rehabilitation | | | √ | √ | √ | |
| 10. COPD Assessment Tool | | 6-12mthly | 6-12mthly | 6-12mthly | 3-4mthly | |
| 11. Acute NIV (Invasive/ Non-invasive) | | | | | | √ |
| 12. Supported Restructured Hospital/ Emergency Department discharge | | | | | | √ |
| 13. Home Oxygen | | | | √ | √ | |
| 14. Advance care planning | | | | √ | √ | |

CONCLUSION

Implementation of the COPD ICP requires a team approach. The team's activities need to support both hospital-based and community-based physician practice. The ICP model represents an opportunity to redesign care that is:

- centred on the needs of our COPD patients, in terms of what they need, when they need it and where they need it,
- has an evidence-base for efficacy and safety,

- covers a comprehensive range of services spanning prevention to palliation,
- cost effective and streamlined through team members performing task at the top of their license, and
- delivered in bundled interventions, aided by integrated electronic health records that incorporate automated order sets and identification of care gaps.

LEARNING POINTS

- **Patients with COPD will benefit from the Integrated Care Pathway (ICP) model of care.**
- **The combined medical and social complexities of COPD patients represent a great challenge for the solo physician, whether in specialty or primary care, to deliver care comprehensively, consistently and efficiently.**
- **Effective management of patients with COPD requires the co-ordinated efforts of the hospital and the community to integrate care across the care continuum.**
- **In the COPD ICP Team approach, the execution of care is based on 5 interdependent tenets.**
- **COPD ICP Care is supported by care managers, communication links for tracking response to therapy, IT support, and equipment support; and care is delivered in bundled interventions, rather than by individual components.**