

## COPD-X Concise Guide: Update 2019: Summary of Changes

- The 2019 update of the COPD-X Concise Guide constitutes a **major review** and revision of the 2017 edition. It includes a summary of the evidence from the full COPD-X guidelines: The COPD-X Plan: Australian and New Zealand Guidelines for the Management of Chronic Obstructive Pulmonary Disease (see [www.copdx.org.au](http://www.copdx.org.au)) up to December 2019.
- The title of this edition has changed to the **COPD-X Concise Guide** with removal of the focus on primary care. This recognises that the resource is being more widely utilised by all clinicians involved in the diagnosis and management of COPD, which extends its clinical applicability across the care continuum.
- The new edition retains its simple and **easy to read format**, its searchable functions, its grades of evidence and its ready reference tables and charts. *Further Information* boxes have been included to complement the *Recommendations* and *Practice Tips*.
- Each section heading has now been phrased as a **question relating to the diagnosis and management of COPD** rather than a statement, to help set the context for clinicians.
- A new Foreword has been provided by Dr Kerry Hancock, Chair, General Practice Advisory Group, National COPD Program, Lung Foundation Australia.
- A new concept diagram on page 4 illustrates the key aspects of COPD management, which replaces the "Solving the COPD puzzle" in the previous version.
- An updated version of the *Stepwise Management of Stable COPD* resource has been included. For the full version and a summary of the key changes, see [Lung Foundation Australia](#).
- A *Reducing Hospital Utilisation* table including level I and II evidence from COPD-X has been included.
- Lung Foundation Australia's [Managing a COPD Exacerbation Checklist](#) has been included.

A summary of the changes by section is outlined below. Those **highlighted in yellow** and deemed most likely to impact clinical practice:

### C: Case finding and confirm diagnosis

#### What risk factors contribute to COPD? (page 6)

- **Amended bullet point** on COPD risk factors:
  - **New wording:** Other COPD risk factors include prenatal and postnatal factors including parental smoking, genetic factors, asthma, socioeconomic, nutritional, and environmental factors (e.g. dusty occupations, air pollution).
  - **Previous wording:** Other COPD risk factors include host (e.g. genetics, age), asthma, socioeconomic, nutritional, and environmental factors (e.g. dusty occupations, air pollution).

### What is the first step in the diagnosis of COPD? (page 6)

- **Amended bullet point** on history and examination:
  - **New wording:** A thorough history should be taken for all people with suspected COPD. This includes documenting any history of prematurity or childhood respiratory problems including asthma, age of onset of symptoms, triggers, occupational and environmental exposures, smoking history, and family history. Asthma is a known risk factor for COPD.
  - **Previous wording:** All patients with suspected COPD should undergo a thorough history-taking that documents childhood respiratory symptoms, presence of allergy, onset of symptoms, triggers, occupational exposures, smoking history, and family history. Asthma can also be a risk factor for COPD.
- **Amended Practice Tips:** (page 6)
  - **New wording:** Consider case finding to target those patients who should have spirometry testing. For more information about case finding, see Lung Foundation [Australia's COPD case finding position paper](#).
  - **Previous wording:** Conduct risk assessment (using Lung Foundation Australia's Lung Health Checklist and a simple lung function tool such as the PiKo-6 or COPD-6) to target those patients who should have further spirometry testing.
  - **New wording:** In primary care, a trained practice nurse could assist the GP by undertaking spirometry.
  - **Previous wording:** A practice nurse could assist the GP by undertaking case finding activities and establishing a register of COPD patients.

### How is COPD confirmed? (page 7)

- **Deleted bullet point:** For simplicity, specific FEV<sub>1</sub> cut offs can be used to assess the severity of airflow limitation
- **New bullet point:** Emphysema may be present in the absence of airflow limitation. Complex pulmonary tests will aid this diagnosis.

- **Amended bullet point:** Many patients with COPD have some reversibility of airflow limitation (mainly FEV<sub>1</sub>) with bronchodilators. However, reversibility alone does not equate to a clinical diagnosis of asthma because the clinical features and pathophysiology of COPD and asthma overlap and both conditions can coexist in some patients, **removing the sentence:** “Asthma can also be a risk factor for COPD.”
- **Amended Recommendations:** (page 7)
  - **New wording:** Spirometry should be performed using standardised techniques.
  - **Previous wording:** Spirometry should be performed using techniques that meet published standards.
  - **New wording added:** In patients with borderline spirometry, consider alternative diagnoses and investigate appropriately. **Follow-up spirometry is also recommended.**
  - **Previous wording:** In patients with borderline spirometry, consider alternative diagnoses and investigate appropriately.
- **Deleted Practice Tip:** Conduct risk assessment and screening (using Lung Foundation Australia’s Lung Health Checklist and a COPD screening device such as the PiKo-6 or COPD-6) to target those patients who should have further spirometry testing.

### How is severity of COPD confirmed? (page 9)

- **Amended Recommendation** on assessment of severity:
  - **New wording:** To guide ongoing management, assess COPD severity based on lung function and a careful assessment of symptoms and signs. Note: severity of symptoms may not correlate with spirometric criteria for severity. History of previous exacerbations may be the strongest predictor of future exacerbations.
  - **Previous wording:** To guide ongoing management, assess COPD severity based on lung function and a careful assessment of symptoms and signs, and review the history of exacerbations at least annually.

### **Table 1. Guide to the severity of COPD** (page 9)

“Typical symptoms” have been amended to reflect the *Stepwise Management of Stable COPD*.

## O: Optimise function

### Optimising function: Where to start? (page 10)

- **Added new wording to bullet point:** A validated assessment tool is a convenient way to measure baseline functional status **and to measure response to treatment**.

### What non-pharmacological strategies are recommended? (page 10)

- **Amended Recommendations:**
  - **Deleted:** Refer for pulmonary rehabilitation for all patients with exertional dyspnoea
  - **Added:** Refer all symptomatic patients to pulmonary rehabilitation.

### What is the recommended approach to prescribing pharmacological therapies?

(page 11-12)

- **Amended and added new wording to bullet point:** Medicines should be introduced using a stepwise approach - **this usually means beginning with a single long-acting bronchodilator**
- **Listed** long-acting muscarinic antagonists **before** long-acting beta<sub>2</sub>-agonists in bullet point: long-acting muscarinic antagonists (tiotropium, glycopyrronium, umeclidinium or aclidinium) or long-acting beta<sub>2</sub>-agonists (indacaterol, salmeterol or eformoterol) may improve lung function, symptoms, quality of life, and exacerbation frequency [I-II]. (page 11)
- **Deleted** theophylline wording.
- **Amended bullet point** on triple therapy:
  - **New wording:** Triple therapy (ICS/LABA/LAMA) results in a lower rate of moderate or severe COPD exacerbations, and better lung function and health-related quality of life than dual therapies. Triple therapy may be most useful for patients with repeated exacerbations.
  - **Previous wording:** Triple therapy decreases hospital admissions in comparison with tiotropium alone but there is insufficient evidence to support the benefit of “triple” therapy for mortality or exacerbations. This combination of therapies may be useful for patients with moderate-to-severe COPD with repeated exacerbations.

- **Added new bullet point:** **Non-pharmacological options for symptom management** include handheld fans, and use of breathlessness recovery positions e.g. forward lean. (page 11)
- **Amended Recommendation** on triple therapy: (page 12)
  - **New wording:** Triple therapy (ICS/LABA/LAMA) should be limited to patients with repeated exacerbations and more severe COPD symptoms that cannot be adequately managed by dual therapy.
  - **Previous wording:** For patients with  $FEV_1 < 50\%$  predicted and  $\geq 2$  exacerbations in 12 months:
    - Consider initiating an inhaled corticosteroid + long-acting beta2-agonist fixed dose combination and discontinue long-acting beta2-agonist monotherapy. SR HE
    - For patients with moderate-to-severe COPD with frequent exacerbations who are not receiving a long-acting muscarinic antagonist, consider addition of a long-acting muscarinic antagonist to the inhaled corticosteroid + long-acting beta2-agonist SR ME
- **Deleted Practice Tip:** Discontinue any LABA monotherapy once ICS/LABA combination has commenced" as ICS/LABA alone is not recommended.
- **Changed:** anticholinergics (antimuscarinics) to muscarinic antagonists

### When should inhaler technique and be reviewed? (page 13)

- **Added new wording to Recommendation:** Consider a home medicines review **by a consultant pharmacist**
- **Removed wording from Recommendation:** if adherence issues are more likely (e.g. multiple medicines, significant changes to medication, confusion, visual impairment)
- **Added new Practice Tip:** Minimise inhaler device polypharmacy

## P: Prevent deterioration

### Why give smoking cessation advice? (page 15)

- **Moved 5-A strategy into Practice Tip and added new wording:**
  - Assess **nicotine dependence and** motivation to quit
  - Assist cessation **by offering behavioural counselling and pharmacotherapy**
- **Deleted bullet point:** Hospitalisation represents an opportunity for initiating smoking cessation, but interventions need to continue after discharge to have a significant effect [1].

### Why immunise against influenza and pneumococcal infection? (page 17)

- **Amended wording** on pneumococcal vaccination:
  - **New wording:** Pneumococcal vaccination reduces the risk of exacerbations but not hospitalisation with no difference between vaccine types.
  - **Previous wording:** Pneumococcal polysaccharide vaccine, 23-valent (23vPPV; Pneumovax 23), produces significant immune responses in immunocompetent adults but there is no direct evidence supporting its efficacy in preventing exacerbations.

### Should mucolytics be used? (page 18)

- **Amended wording:**
  - **New wording:** **Mucolytics** including N-acetylcysteine, erdosteine, carbocysteine or ambroxol have been shown to reduce exacerbations in moderate to severe COPD [1]. However, none are currently available in Australia.
  - **Previous wording:** A systematic review and a large randomised controlled trial showed high dose N-Acetylcysteine ( $\geq 600\text{mg}$  oral, bd) reduced exacerbations in moderate to severe COPD.
- **Deleted Recommendation:** In patients with moderate to severe COPD with at least one exacerbation in the past year, high dose oral N-Acetylcysteine\* ( $\geq 600\text{mg}$  oral, bd) should be considered to reduce exacerbations. SR HE P  
\*Not readily available in Australia

## D: Develop a plan of care

### What is good chronic disease care and what are the benefits? (page 19)

- **Added new bullet point** "Implement systems to enable structured care, regular recall and clinical review of patients with COPD"
- **Deleted bullet point:** An individualised chronic disease care plan anticipates the wide range of episodic and long-term care needs of people with chronic diseases.
- **Deleted sub-bullet point:** Developing a practice register of patients with COPD and ensuring it is updated assists the practice in providing systematic care.
- **Deleted Practice Tip:** Practice nurses can be utilised to establish COPD patient registers and reminders and recall systems

### How can health professionals improve quality of life and reduce disability for patients with COPD? (page 19)

- **Amended wording** on clinical support teams:
  - **New wording:** A clinical support team including healthcare professionals from a range of disciplines should be involved in comprehensive management of patients with COPD and their comorbid conditions.
  - **Previous wording:** A clinical support team including healthcare professionals from a range of disciplines where available (such as nurse practitioners, practice nurses, dieticians, physiotherapists, exercise physiologists, community and specialist pharmacists, social workers, psychologists) should be involved in comprehensive management of patients with COPD and their comorbid conditions

### What is self-management support and how can patients benefit? (page 20)

- **Amended bullet point** adding details of what self-management programs include:
  - Patient self-management **programs** include a range of initiatives (**education programs and comprehensive multicomponent interventions**) involving patients and health professionals and are delivered via different modalities (e.g. face-to-face consultation, internet, TV, telephone) aimed at enabling patients to enhance the management of their health.

- **Deleted bullet point:** Self-management programs involving written COPD action plans for exacerbation management and education and counselling strategies that incorporate disease and symptom management, emotional support, problem solving and decision making have been shown to improve health outcomes [I].
  
- **Amended bullet point** on action plans:
  - **New wording:** COPD action plans can aid recognition of and response to exacerbations [I] and should be included as part of a comprehensive self-management program. When action plans are incorporated into self-management programs, exacerbations are reduced.
  
  - **Previous wording:** Action plans can aid recognition of and response to exacerbations [I] but action plans should not replace comprehensive self-management plans that incorporate elements such as education and regular review for suitable patients.
  
- **Amended bullet point** on self-management ability:
  - **New wording:** When selecting patients for self-management support, consideration should be given to the patient's self-management ability. Only patients who adhere to self-management plans receive benefits such as decreased exacerbation recovery time [III-2].
  
  - **Previous wording:** Caution is advised when considering patient suitability for self-management support. Evidence suggests that only patients who adhere to self-management plans receive benefits such as decreased exacerbation recovery time [III-2]. One study of US veterans found worse outcomes for patients who were randomly allocated to a comprehensive care program involving self-monitoring compared with those who received usual care [II].

## X: Manage eXacerbations

### How is a COPD exacerbation defined? (page 22)

- **Deleted bullet point:** The role of bacterial infection is controversial as the lower airway is frequently colonised by Haemophilus influenzae, Streptococcus pneumoniae and Moraxella catarrhalis in patients with COPD [III-2, III-3]

### What are the benefits of early diagnosis and treatment of exacerbations? (page 23)

- **Added new wording:** “Hospital admissions are indicators of failed prevention and are highly expensive to health care systems. Hospitalisations are increasingly being included as an outcome measure in randomised controlled trials of a range of interventions.”
- Inclusion of a new figure: *Figure 2. Reducing hospital utilisation: current level I and II evidence from COPD-X* and wording “**Figure 2** below summarises the interventions that have been demonstrated in such randomised controlled trials to statistically significantly reduce hospitalisations.
- **Amended wording** on action plans:
  - **New wording:** A **COPD action plan** can aid the recognition of, and response to, an exacerbation. When prescribed and delivered within a single short educational program, with ongoing support directed at their use, COPD action plans reduce in-hospital health care use and increase the initiation of corticosteroids and antibiotic treatment for COPD exacerbations [I].
  - **Previous wording:** An action plan can aid the recognition of, and response to, an exacerbation but needs to be combined with comprehensive self-management support and integrated care based on shared care to reduce hospitalisation [I].

### When should a patient with COPD be hospitalised? (page 24)

- **Added new bullet point** in list of symptoms of an exacerbation:
  - Worsening or new hypoxaemia measured with pulse oximetry
- **Deleted bullet point** in list of symptoms of an exacerbation:
  - SpO<sub>2</sub> < 92%

Are inhaled bronchodilators effective for treatment of exacerbations? (page 25)

- **Deleted bullet point:** Limited evidence suggests dry powder inhalers are as effective as other delivery devices [III-2].
- **Added wording to Recommendation:** Check that the patient can use the delivery device properly considering factors such as cognition, manual dexterity, and press and breathe co-ordination **between actuation and inhalation.**

Are oral corticosteroids effective for treating exacerbations? (page 25)

- **Amended wording in Recommendation** on oral corticosteroids:
  - **New wording:** In patients with exacerbations, prescribe oral corticosteroids (prednisolone 30-50 mg or equivalent, taken in the morning with or immediately after food) for 5 days and then stop; tapering the dose after a short course is generally not required.
  - **Previous wording:** In patients with exacerbations, prescribe oral corticosteroids (prednisolone 30-50 mg or equivalent, taken in the morning) for 5 days and then stop; tapering the dose should not be necessary.
- **Deleted Practice Tip:** For periods up to 2 weeks, tapering of corticosteroid dose is unnecessary.
- **Added Practice Tip:** Long-term oral corticosteroids should be avoided

When are antibiotics beneficial in treating a patient with an exacerbation? (page 26)

- **Deleted bullet points:**
  - Extrapolation from data in asthma would suggest that bacterial infection may have a role in about half of exacerbations with H. influenzae, S. pneumoniae and M. catarrhalis being the most common causative organisms.
  - P. aeruginosa or S. aureus are more likely to be involved in patients with severely decreased lung function ( $FEV_1 < 35\%$ ) [III-2, III-3].
  - Clinical response to treatment is typically seen in 3-5 days (but may take longer); a change of antibiotic should be considered if the response is inadequate.

- Inhaled corticosteroids, especially at high doses, are associated with an increased risk of pneumonia [1].
- **Amended Recommendation** on **antibiotic prescribing**:
  - **New wording:** In patients with exacerbations and clinical features of infection, prescribe oral amoxicillin (500 mg every 8 hours) **or 1 g every 12 hours**, or doxycycline (100 mg daily for 5 days). **If the response to initial antibiotic therapy is inadequate, optimise bronchodilators and oral corticosteroid therapy and reassess the diagnosis.** If the patient is not improving and the sputum culture grows a resistant organism, a change in antibiotics should be considered.
  - **Previous wording:** In patients with exacerbations and clinical features of infection, prescribe oral amoxicillin (500mg every 8 hours) or doxycycline (200mg orally, for the first dose, then 100mg daily) for 5 days. If the patient is not improving and the sputum culture grows a resistant organism a change in antibiotics should be considered.

### Is oxygen beneficial in treating a patient with an exacerbation? (page 26)

- **Amended Recommendation** on administering oxygen to patients with hypoxaemia:
  - **New wording:** In patients with COPD and hypoxaemia, administer oxygen via nasal cannula aiming for a SpO<sub>2</sub> of 88-92%.
  - **Previous wording:** In patients with COPD and hypoxaemia aim for a SpO<sub>2</sub> of 88-92%. Administering oxygen via nasal cannula at a flow rate of 0.5-2L/min is adequate.
- **Amended Recommendation** on high flow oxygen:
  - **New wording:** Avoid over-oxygenation/ high concentrations of oxygen in patients with COPD as this may lead to acute respiratory failure and death.
  - **Previous wording:** Avoid the use of high-flow oxygen in patients with COPD as this may lead to hypoventilation and acute respiratory failure.

Following an exacerbation, how soon can pulmonary rehabilitation be commenced? (page 27)

- **Amended bullet point:**
  - **New wording:** Pulmonary rehabilitation that includes supervised exercise training commenced immediately following an exacerbation improves exercise tolerance and quality of life, reduces COPD-related hospital admissions and mortality in the short-term and has been shown to be safe [1].
  - **Previous wording:** Pulmonary rehabilitation that includes supervised exercise training can be safely initiated immediately following an exacerbation [1].