Management of Chronic Obstructive Pulmonary Disease in General Practice

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ICGP QUALITY IN PRACTICE COMMITTEE

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Key to Levels of Evidence and Grades of Recommendations[1]

The levels of evidence used to inform this document are as per the GOLD format in Table 1. In addition to the evidence based recommendations of the GOLD guidelines, a number of recommendations from other guideline documents were also considered appropriate to the Irish setting.

Table 1: Levels of Evidence7

Evidence Category	Sources of evidence	Definition
A	Randomised controlled trials (RCTs). Rich body of data.	Evidence is from endpoints of well-designed RCTs that provide consistent pattern of findings in the population for which the recommendation is made. Category A requires substantial numbers of studies involving substantial numbers of participants.
B	Randomised controlled trials (RCTs). Limited body of data.	Evidence is from endpoints of intervention studies that include only a limited number of patients, posthoc or subgroup analysis of RCTs, or meta-analysis of RCTs. In general, Category B pertains when few randomised trials exist, they are small in size, they were undertaken in a population that differs from the target population of the recommendation, or the results are somewhat inconsistent.
C	Non randomised trials. Observational studies.	Evidence is from outcomes of uncontrolled or nonrandomised trials or from observational studies.
D	Panel consensus judgement.	This category is used only in cases where the provision of some guidance was deemed valuable but the clinical literature addressing the subject was deemed insufficient to justify placement in one of the other categories. The Panel Consensus is based on clinical experience or knowledge that does not meet the above-listed criteria.

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How to use this document

It is intended that this document will aid general practitioners and nurses working in primary care in the management of patients with COPD. It is based on current knowledge of best practice but is not intended to be a definitive text on COPD in general practice. A summary sheet accompanies this document as an aide memoir for your desk.

Key Points

Every patient with COPD should have spirometry carried out at least once by a trained person.

All smokers—including those who may be at risk for COPD as well as those who already have the disease—should be offered the most intensive smoking cessation intervention feasible.

Inhaled bronchodilator therapy is preferred. Training and regular review of inhaler technique is essential.

Each patient should have a self management plan with advice on how to prevent exacerbations and actions in the event of one occurring.

Patients receiving long term oxygen therapy (LTOT) should be reviewed at least once per year by practitioners familiar with LTOT.

LTOT should ideally be administered continuously (i.e. 24hrs/day), as improvement in survival is only seen above a minimum usage of 15hours/day.

Thirty to 40 mg of oral prednisolone daily for 7 to 10 days is effective and safe for the treatment of an exacerbation. It is not necessary to taper the dose of steroids given.

Hospitals admitting people with acute medical emergencies should have access to non invasive ventilation (NIV).

1. Introduction

1.1 Background

Worldwide the burden of Chronic Obstructive Pulmonary Disease (COPD) is growing. Today as many people die from COPD as die from HIV/AIDS.[1] Currently, COPD is the tenth leading disease burden worldwide and by 2020, it will be the third leading cause of death.[2]

Based on international figures at least 440,000 people in Ireland have COPD, of whom over 180,000 have moderate or severe disease, and only half of whom may be diagnosed. [3] As a chronic condition, much of the management of patients with COPD takes place in primary care and most patients who get exacerbations of COPD are managed at home by their GP. In 2006 over 18,500 people in Ireland were treated for exacerbations of COPD within the community.[4]

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) was formed by the World Health Organisation along with the US National Heart, Lung, and Blood Institute in 1998 in an effort to bring more attention to COPD, its management, and its prevention. The first step in the programme was to prepare a consensus report, Global Strategy for the Diagnosis, Management, and Prevention of COPD, published in 2001.[5] Yearly updates are produced, which are based on publications from the previous years. GOLD is also part of Global Alliance for Respiratory Disease (GARD), a voluntary alliance of national and international organisations, institutions, and agencies working towards the common goal of improving global lung health.

A National COPD Strategy Group was convened in 2007 and reviewed international guidelines as part of its task to develop a strategy for the management of COPD.[6] The Strategy Group considered the GOLD Guidelines to be the most appropriate on which to base Irish guidelines, while also using relevant components from other English language guidelines.[7]

1.2 Aims of Document

This document aims to provide an overview of the internationally accepted GOLD guidelines on the management of COPD, including aspects relevant to care in Ireland as agreed by the National Strategy Group. The emphasis is on management within the community and algorithms are provided for ease of use in primary care.

Recommendations are outlined using the components of the GOLD approach, which are as follows:

- Assess and Monitor Disease
- Reduce Risk Factors
- Manage Stable Disease
- Manage Exacerbations

2. Assessment and Monitoring of Disease

The key steps in the diagnosis, assessment and monitoring of a patient with COPD are summarised in Algorithm A. (Appendix 1)

2.1 Consider diagnosis

COPD should be considered in any patient who has dyspnoea, chronic cough or sputum production, and/or a history of exposure to risk factors for the disease. The diagnosis should be confirmed by spirometry.

2.2 History, functional assessment and physical examination

A detailed history and functional assessment of a patient thought or known to have COPD should include the factors listed in Algorithm A (Appendix 1). A physical examination is rarely diagnostic in COPD but it is an important part of patient care.

2.3 Assessment of severity

Assessment of COPD severity is based on the severity of the spirometric abnormality (Table 2), the patient's level of dyspnoea (Table 3) and the presence of complications.

(a) Measurement of airflow limitation - spirometry

Spirometry, an objective measure of how an individual inhales and exhales air as a function of time, is the gold standard for diagnosing, assessing and monitoring COPD.

All health professionals managing patients with COPD should have access to spirometry. Appropriate training is required for staff and equipment must be maintained correctly. Improvement in access to quality assured spirometry has been highlighted as a priority for Ireland.[6]

Every patient with COPD should have spirometry carried out at least once by a trained person.

(b) Subjective assessment of airflow limitation

An individual's experience of functional impairment due to dyspnoea can be monitored using the scale in Table 3.

Table 2: Stages of COPD based on spirometry

Stage I: Mild COPD	Individual may not be aware that his/her lung function is abnormal. Mild airflow limitation (**FEV_1/FVC < 70%; FEV_1 ≥ 80%** predicted) and sometimes, but not always chronic cough and sputum production.
Stage II: Moderate COPD	Patients typically seek medical attention at this stage because of chronic respiratory symptoms or an exacerbation of their disease. Worsening airflow limitation (**FEV_1/FVC < 70%; FEV_1 50% to 80%** predicted), with shortness of breath typically developing on exertion.
Stage III: Severe COPD	Greater shortness of breath, reduced exercise capacity and repeated exacerbations which impact on a patient's quality of life. Further worsening of airflow limitation (**FEV_1/FVC < 70%; FEV_1 30% to 50%** predicted).
Stage IV: Very severe COPD	Quality of life is very appreciably impaired and exacerbations may be life-threatening Severe airflow limitation (**FEV_1/FVC < 70%; FEV_1< 30%** predicted **or FEV_1 < 50% predicted plus chronic respiratory failure**).

Table 3: MRC Dyspnoea Scale

Grade 1:	Not troubled by breathlessness except on strenuous exercise
Grade 2:	Short of breath when hurrying or walking up a slight hill
Grade 3:	Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace
Grade 4:	Stops for breath after walking about 100m or after a few minutes on level ground
Grade 5:	Too breathless to leave the house or breathless when dressing or undressing

A composite score – called The BODE score – of Body mass index (BMI), airway Obstruction (FEV1), Dyspnoea (MRC dyspnoea scale) and Exercise capacity (distance walked in six minutes) is a better predictor of prognosis than any of the variables individually.

2.4 Additional Investigations

Additional investigations to consider include bronchodilator reversibility testing to rule out a diagnosis of asthma, chest x-ray to exclude alternative diagnoses and alpha-1 antitrypsin deficiency screening in patients under 45 years or with a strong family history of COPD.

Investigations may also be required due to the possibility of co-morbidites. A patient with COPD may have co-morbidities for a number of reasons:

- Disease with a common pathophysiology, e.g. smoking related heart disease or lung cancer
- Inter-current disease, e.g. an acute respiratory tract infection
- Complicating disease, e.g. pulmonary hypertension
- Coincidental disease, e.g. diabetes, dementia, cancer.

2. Reduction of Risk Factors

3.1 Smoking cessation

Smoking cessation is the single most effective way to prevent COPD and its progression. Stopping smoking can prevent and delay the development of airflow limitation, reduce its progression, and have a substantial effect on subsequent mortality.

A five step programme for smoking cessation is outlined in Table 4.[8,9,10] A brief (3-minute) period of counselling results in smoking cessation rates of 5-10%. Approved pharmacotherapy, should be combined with an appropriate support programme to optimise smoking quit rates. Approved pharmacotherpy includes nicotine replacement therapy, antidepressants (such as bupropion) and varenicline.[11,12]

All smokers—including those who may be at risk for COPD as well as those who already have the disease—should be offered the most intensive smoking cessation intervention feasible.

Table 4: Smoking cessation - Five As

ASK	Systematically identify all tobacco users at every visit. Implement a system that ensures that, for EVERY patient at EVERY health service visit, tobacco-use status is queried and documented.
ADVISE	Strongly urge all tobacco users to quit.
ASSESS	Determine willingness to make a quit attempt. Ask every tobacco user if he or she is willing to make a quit attempt at this time (e.g., within the next 30 days).
ASSIST	Aid the patient in quitting. Help the patient with a quit plan; provide practical counselling; provide intra-treatment social support; help the patient obtain extra-treatment social support; recommend use of approved pharmacotherapy except in special circumstances; provide supplementary materials.
ARRANGE	Schedule follow-up contact, either in person or via telephone.

3.2 Other risk factors

Other modifiable risk factors to consider include occupational exposures and indoor/outdoor air pollution.

3. Management of Stable COPD

The key steps in the management of a patient with stable COPD are summarised in Algorithm B (Appendix 2). A stepped approach according to stage of disease is provided in Table 5.

Table 5: Recommended therapy according to stage of COPD

<table>
<tr><th>I: Mild</th><th>II: Moderate</th><th>III: Severe</th><th>IV: Very severe</th></tr>
<tr><td colspan="4">Active reduction of risk factors; relevant immunisation
Add short-acting bronchodilator when needed (e.g. salbutamol)</td></tr>
<tr><td></td><td colspan="3">Add regular treatment with one or more long-acting bronchodilators of different classes when needed (e.g. salmeterol, tiotropium); add *rehabilitation</td></tr>
<tr><td></td><td></td><td colspan="2">Add inhaled glucocorticosteroids if repeated exacerbations (e.g. beclomethasone or as combination therapy salmeterol/fluticasone)</td></tr>
<tr><td></td><td></td><td></td><td>Add long term oxygen therapy if chronic respiratory failure; consider surgical treatments</td></tr>
</table>

*Ideally rehabilitation should be offered at the time of diagnosis, which should be as early as possible in disease severity.

4.1 Pharmacological Management

(a) Bronchodilators

Bronchodilators are central to symptom management of COPD (Evidence A).[13,14,15,16] They should be used "as required" to relieve intermittent or worsening symptoms and on a regular basis to prevent or reduce persistent symptoms.

Regular treatment with long-acting inhaled bronchodilators is more effective and convenient than treatment with short-acting bronchodilators (Evidence A).[17,18,19,20] Combining bronchodilators of different classes, i.e. a $ß_2$-agonist and anticholinergic, may improve efficacy and decrease the risk of side effects compared to increasing the dose of a single bronchodilator.

Results of recent studies into the safety of inhaled anticholinergics are conflicting and do not allow any firm conclusions to be drawn. Patients should therefore be reminded as with other medication not to exceed the recommended dose.[21]

Examples of inhaled $ß_2$-agonist:	*salbutamol (short acting); salmeterol (long acting)*
Examples of inhaled anticholinergic:	*ipratroprium (short acting); tiotropium (long acting)*
Example of $ß_2$-agonist/anticholinergic:	*salbutamol/ipratropium*

Inhaled therapy is preferred. Training and regular review of inhaler technique is essential.

(b) Glucocorticosteroids

Regular treatment with inhaled glucocorticosteroids is only appropriate for patients with an FEV_1 <50% predicted and repeated exacerbations (e.g. three in the last three years) (Evidence A).[22,23,24,25] Long-term treatment with oral glucocorticosteroids is not recommended in COPD (Evidence A).[26,27,28,29]

Examples of inhaled glucocorticosteroid:	*beclomethasone, budesonide*
Example of $ß_2$-agonist/glucocorticosteroid:	*salmeterol/fluticasone*

(c) Other pharmacological treatments

Influenza (Evidence A)[30,31,32] and pneumococcal (Evidence B)[33,34] vaccination should be given as per National Immunisation Guidelines.[35]

Antibiotics are not recommended except for the treatment of infectious exacerbations (Evidence A).[36,37] The regular use of antitussives and mucolytic agents is not recommended at present (Evidence D).

4.2 Non pharmacological management

(a) Patient education, self management and support

Patient education can play a role in improving skills, ability to cope with illness and health status.[38]

Ideally, educational messages should be incorporated into all aspects of care and in all settings, and should include information about the nature of COPD, advice about reducing risk factors, recognising symptoms, coping skills including specific information on treatment options as disease severity increases.

Each patient should have a self management plan with advice on how to prevent exacerbations and actions in the event of one occurring.

Refer to Appendix 5 containing patient self management plan.

(b) Pulmonary Rehabilitation

The principal goals of pulmonary rehabilitation are to reduce symptoms, improve quality of life, and increase physical and emotional participation in everyday activities. To accomplish these goals, pulmonary rehabilitation tackles a range of non-pulmonary problems such as exercise de-conditioning, relative social isolation, altered mood states (especially depression), muscle wasting and weight loss (Evidence A).[39,40,41,42]

Comprehensive pulmonary rehabilitation programmes include patient assessment, exercise training, education, nutritional intervention, skills training, smoking cessation and psychosocial support.[43] The minimum length of an effective rehabilitation program is six weeks; the longer the programme continues the more effective the results (Evidence B).[44,45,46]

Ideally pulmonary rehabilitation should be offered as soon as possible after diagnosis (see Table 5) (Evidence D). Service capacity is such that most patients attending at present are at a much later stage in the disease.

(c) Controlled oxygen therapy

The need for long term oxygen therapy (LTOT) should be assessed in patients with:

- severe airflow obstruction
- cyanosis
- polycythaemia
- peripheral oedema
- raised jugular venous pressure
- evidence of pulmonary hypertension
- oxygen saturation ≤ 92% breathing air

Patients should be assessed for LTOT by a respiratory specialist. **Patients receiving LTOT should be reviewed at least once per year by practitioners familiar with LTOT** and this review should include pulse oximetry.

In stable COPD oxygen can be administered for long periods during the day and night (long term oxygen therapy (LTOT)), or as ambulatory oxygen (either as part of LTOT or on its own to facilitate exercise).

LTOT should ideally be administered continuously (i.e. 24hrs/day), as improvement in survival is only seen above a minimum usage of 15hours/day (Evidence A).[7,47]

(d) Surgical treatment

Surgical treatment including bullectomy and lung transplantation may be considered in carefully selected patients.

5. Management of Exacerbations

The key steps in the management of a patient with an exacerbation of COPD are summarised in Algorithm C (Appendix 3).

5.1 Prevention

Frequency and severity of exacerbations may be reduced using the aforementioned strategies:

- patient education
- smoking cessation
- influenza and pneumococcal immunisation
- pulmonary rehabilitation

5.2 Diagnosis and assessment of severity

See Algorithm C (Appendix 3).

5.3 Pharmacological Management

Table 6: ABC Pharmacological management of exacerbations[59]

Antibiotics:	*Oral antibiotics if sputum is purulent*
Bronchodilators:	*Increase frequency of bronchodilator therapy; consider changing to nebulised therapy*
Corticosteroids:	*Prednisolone 30-40mg mg daily for 7-10 days*

Antibiotics should be given to patients:[48]

- with all three cardinal symptoms of increased dyspnoea, increased sputum volume, and increased sputum purulence (Evidence B)
- with increased sputum purulence and one other cardinal symptom (Evidence C)
- who require mechanical ventilation (invasive or non invasive) (Evidence B).

Choice of empirical treatment should take account of any local microbiology guidelines. Categories to consider are aminopenicillins (e.g. amoxicillin), macrolides, or a tetracycline.

Bronchodilators

- Increase dose and/or frequency of existing short-acting bronchodilator therapy, preferably with beta$_2$ – agonists (Evidence A).[49,48]
- Consider use of spacers or air driven nebulisers to deliver bronchodilators (Evidence B).[50]

Corticosteroids[51,52]

- Oral corticosteroids should be considered in patients managed in the community who have an exacerbation with a significant increase in breathlessness which interferes with daily activities (Evidence A)
- Thirty to 40 mg of oral prednisolone daily for 7 to 10 days is effective and safe. It is not necessary to taper the dose of steroids given.
- Osteoporosis prophylaxis should be considered in patients requiring frequent courses of oral corticosteroids.

5.4 Non pharmacological management

(a) Chest physiotherapy

The aims of chest physiotherapy are to assist sputum removal and improve ventilation without increasing the distress of the patient, but high quality evidence of improvement in lung function is lacking.[53] Physiotherapy should be considered for selected patients with exacerbations of COPD, to help with clearing sputum (Evidence B). Physiotherapy can also help reduce the work of breathing associated with respiratory disease, restore patients' maximal function, and improve muscle weakness. This is best delivered through a formal pulmonary rehabilitation programme, once the patient is stable (see section 4.2).

(b) Ventilatory support

In addition to controlled oxygen therapy, patients may require ventilatory support. Non invasive ventilation (NIV) is the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations despite optimal medical therapy (Evidence A).[54,55,56,57]

Any hospital admitting acute medical emergencies should have access to NIV.

5.5 Treatment location

Most patients with an exacerbation of COPD can be managed at home but some will need access to specialist assessment / opinion either in home or in hospital, assessment in a Medical Assessment unit, or in-patient admission. This may be because of the severity of the exacerbation, the need for therapies that are not available to that patient at home (such as oxygen or nebulised bronchodilators), or the need for specialist interventions such as non-invasive ventilation.

The following factors should be taken into consideration when deciding where to manage a patient with an exacerbation of COPD (Algorithm C / Appendix 3):

- Ability to cope at home
- Level of consciousness
- Already receiving long term oxygen therapy
- Rapid rate of onset of exacerbation.

Generally, with the exception of invasive or non-invasive mechanical ventilation, many of the therapies are suitable for delivery to patients at home. There are a number of alternative care options including rapid assessment units, early discharge schemes and hospital-at-home models of care but availability of these is not uniform.

5.6 Discharge and follow up

Discharge planning should be carried out for those managed by specialist services in the community. Care should be taken to ensure that patients who are cared for in the community during an exacerbation – thus avoiding hospital admission – can still access the same specialist follow-up services, e.g. referral for pulmonary rehabilitation.

6. Palliative Care[58]

Some people with COPD experience a rapid decline in lung function which may lead to an early death, while others have a gradual, progressive decline punctuated by severe exacerbations. This uncertainty of the disease trajectory in COPD can make it very difficult for a physician to broach the subject of death with a patient. However morbidity and mortality associated with the condition are high and adopting a palliative care approach can be invaluable.

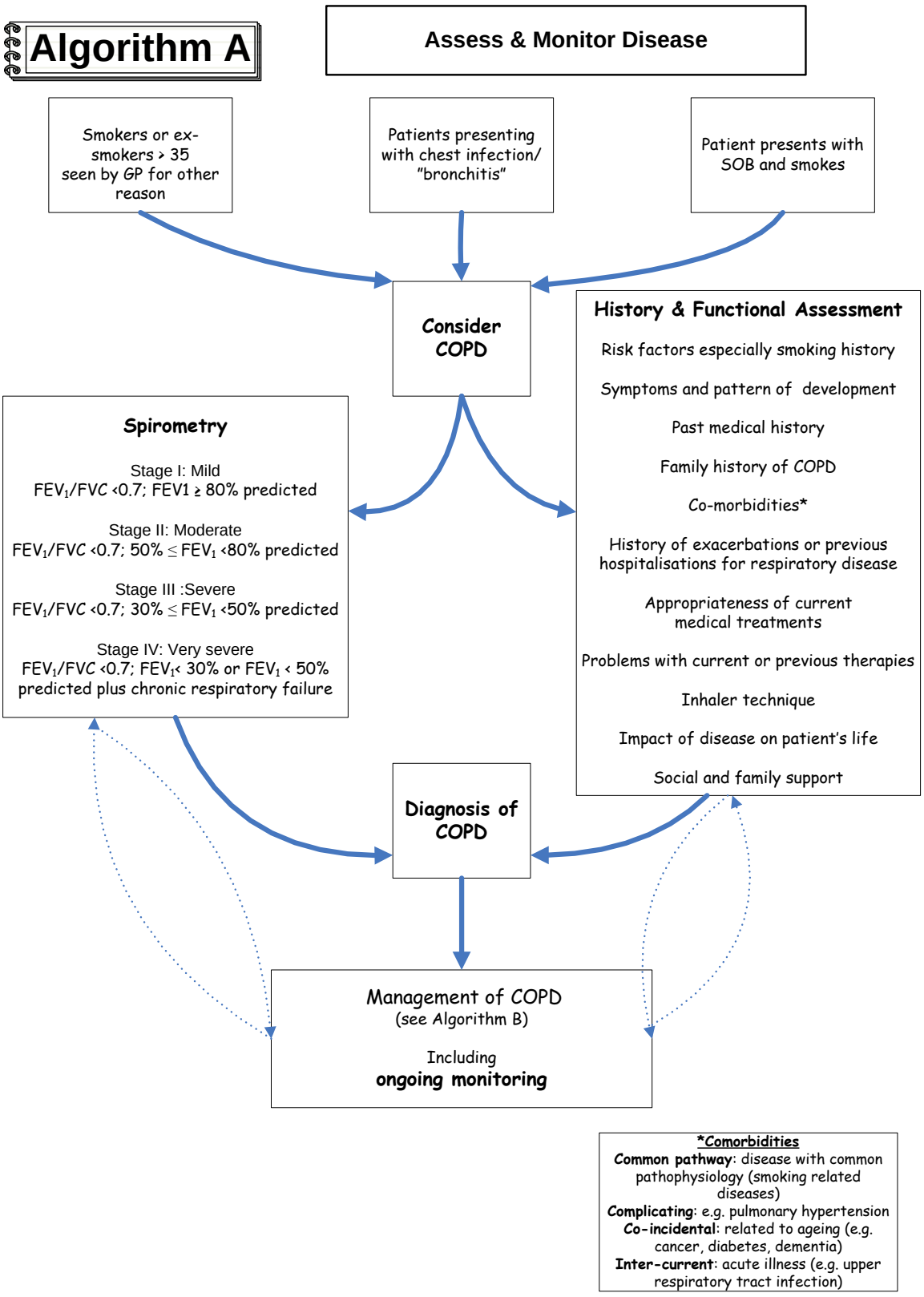
Aspects of non-specialist palliative care to consider early in the disease include:

- Symptom management, including dyspnoea, pain, fatigue
- Responding to anxiety and depression that is prevalent with the disease
- Assisting in understanding the disease trajectory and advice and support relating to advanced planning

Triggers for referral to specialist palliative care services (SPC) include:

- FEV1 <30% predicted with severely limited and declining performance status
- Increased intensity of symptoms despite optimal management
- Plus at least one of the following:
  advanced age
  multiple morbidities
  severe systemic manifestations/complications of COPD

Appendix 1


Algorithm A
Assess & Monitor Disease
Smokers or ex-smokers > 35 seen by GP for other reason
Patients presenting with chest infection/ "bronchitis"
Patient presents with SOB and smokes
Consider COPD
History & Functional Assessment
Risk factors especially smoking history
Symptoms and pattern of development
Past medical history
Family history of COPD
Co-morbidities*
History of exacerbations or previous hospitalisations for respiratory disease
Appropriateness of current medical treatments
Problems with current or previous therapies
Inhaler technique
Impact of disease on patient's life
Social and family support
Spirometry
Stage I: Mild
FEV1/FVC <0.7; FEV1 ≥ 80% predicted
Stage II: Moderate
FEV1/FVC <0.7; 50% ≤ FEV1 <80% predicted
Stage III :Severe
FEV1/FVC <0.7; 30% ≤ FEV1 <50% predicted
Stage IV: Very severe
FEV1/FVC <0.7; FEV1< 30% or FEV1 < 50% predicted plus chronic respiratory failure
Diagnosis of COPD
Management of COPD
(see Algorithm B)
Including
ongoing monitoring
*Comorbidities
Common pathway: disease with common pathophysiology (smoking related diseases)
Complicating: e.g. pulmonary hypertension
Co-incidental: related to ageing (e.g. cancer, diabetes, dementia)
Inter-current: acute illness (e.g. upper respiratory tract infection)

Algorithm B

Management of Stable COPD

Assessment according to Algorithm A-
Individualise management to address symptoms and improve quality of life.

Preventive Measures

- Avoidance of risk factors
  - If smoker → Smoking cessation: ASK, ADVISE, ASSESS, ASSIST, ARRANGE
- Influenza vaccination
  Pneumococcal vaccine

Patient education, self management and support

- Information and advice about how to ↓ risk factors, to recognise symptoms and coping skills
- Patient held record to include information on available support services etc
- Pulmonary rehabilitation at time of diagnosis

Pulmonary Rehabilitation

Evidence-based, multidisciplinary intervention.
Individually tailored and designed to reduce symptoms, improve quality of life, and increase physical and emotional participation in everyday activities.

Programme should include:
Patient assessment
Exercise training
Nutrition
Education
Skills training
Smoking cessation
Psychological assessment and support

Pharmacological Therapy

Pharmacological Therapy
as per GOLD Guidelines

Bronchodilators for symptom relief or prevention – $ß_2$ – agonist/anticholinergics used singly or in combination e.g.

$ß_2$ – agonist:	salbutomal	(short acting);
	salmeterol	(long acting);
Anticholinergic:	ipratroprium	(short acting);
	tiotropium	(long acting)

$ß_2$ – agonist/anticholinergics: salbutamol /ipratropium. Inhaled therapy is preferred.

Long acting more effective and convenient.

Inhaled steroids should not be used as a first-line medication.

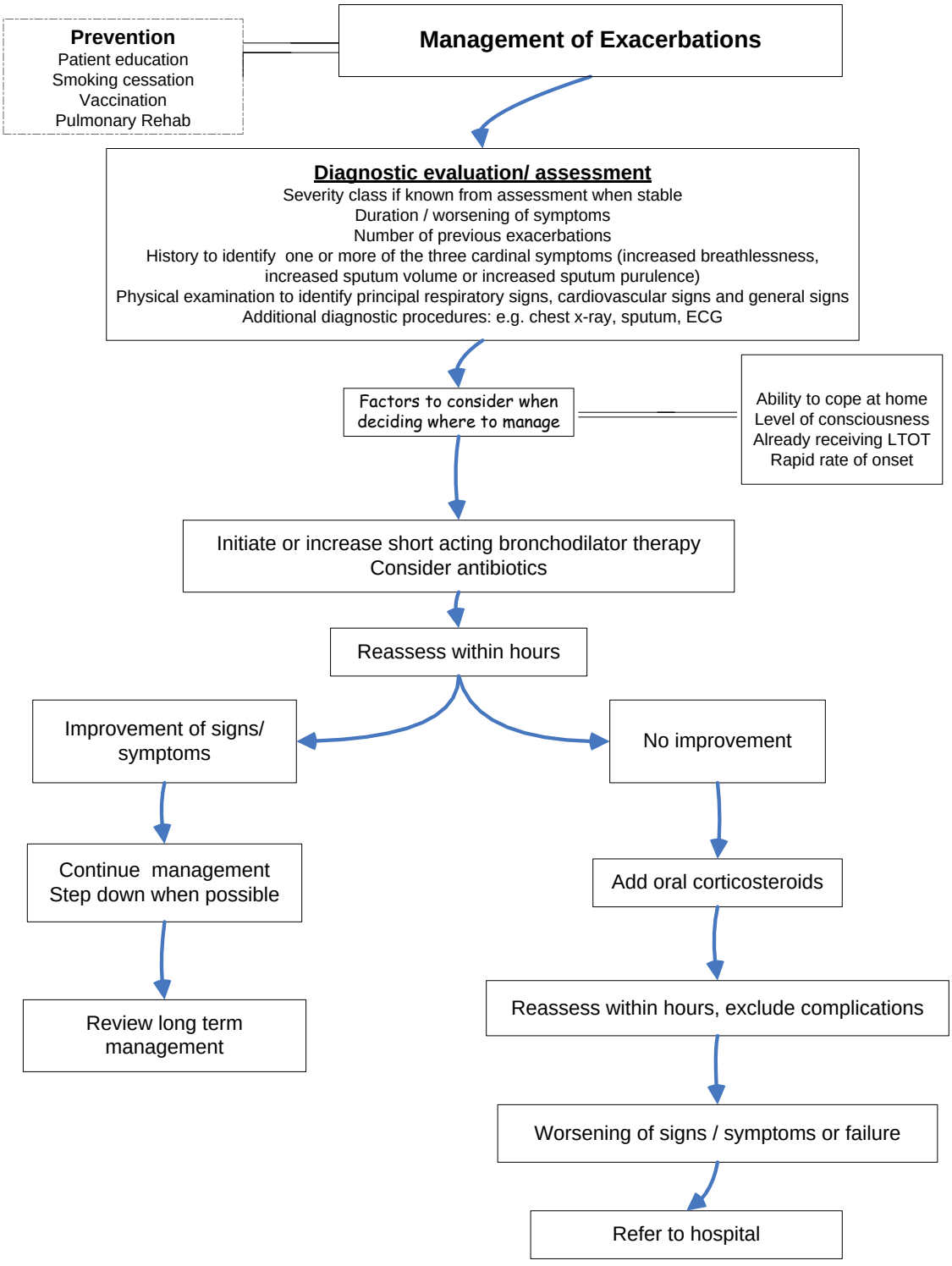
Specialist Referral

At any stage of the disease when indicated e.g.

- to establish the diagnosis
- to exclude other pathology
- to reassure the patient
- to reinforce the need to stop smoking
- to optimise treatment
- to assess the need for more complex therapies

For example: onset at early age or family history of alpha-1 antitrypsin deficiency, frequent exacerbations, rapid disease progression, onset of cor pulmonale, assessment for oxygen therapy.

Algorithm C



Stepwise therapeutic approach to the management of an exacerbation in the community.[59]

Appendix 4: Further Information

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) website http://www.goldcopd.com includes the following resources:

- Pocket Guide to COPD Diagnosis, Management, and Prevention
- Global Strategy for Diagnosis, Management, and Prevention of COPD
- GOLD Spirometry Guide
- Spirometry Quick Guide
- Instructions for Inhaler and Spacer Use
- Patient Guide

COPD Self Management Plans are also available to purchase via The British Lung Foundation website http://www.lunguk.org/

Appendix 5: Sample COPD Self Management Plan*

COPD Self Management Plan for: ……

	SYMPTOMS	ADVICE
FEELING WELL	I can walk …… before becoming short of breath. I sleep ……. hours at night Appetite ……. Colour of phlegm …… Amount of phlegm……	Avoid things that make your symptoms worse. If smoking, try to stop. Plan your day's activity in advance. Take medication as prescribed. Eat a healthy diet as advised. Take regular exercise as advised by the Physio or Nurse.
FEELING SLIGHTLY UNWELL This could be due to a change in the weather or you may feel stressed.	More breathless than usual. Coughing up more phlegm or developing a wheeze.	Use breathing control techniques and positions of ease to aid relaxation. Use chest clearance techniques as taught by your Physio. Take …… …….. Avoid or reduce exposure to things that irritate your chest. If no relief, contact your COPD Team, GP, or practice nurse
FEELING POORLY	**If your symptoms persist or you have 2 of those listed below:** Increased shortness of breath Increased amount of phlegm Yellow or green phlegm	Take …… …….. Contact your COPD Team, GP, or Practice Nurse for review. Take antibiotics and steroids (Prednisolone) as recommended/provided by your GP. **If your ankles are more swollen than normal, you should contact your GP.**
GETTING MUCH WORSE	No improvement after starting above treatment. Continued increased amount of phlegm Severe increase in shortness of breath at rest.	**Attend/ contact GP urgently.** **If not able to see GP, visit the A&E Dept.**
VERY UNWELL	Very breathless at rest, chest pain, or confusion.	**This is an emergency, call 999. Use oxygen and nebuliser if available until ambulance arrives.**

Issued By: …… **Date Issued: ……**

Reliever A reliever (blue) is a short acting inhaler which works quickly to relieve your breathlessness, wheeziness and/or cough by relaxing tightened airways. It can also be called a bronchodilator. **Your reliever inhaler is:**	**Protector** A protector (green) is a long acting reliever which reduces symptoms and works by keeping the airways open and relaxed. This should be taken twice a day. This should not be used for immediate relief of breathlessness. **Your protector is:**	**Additional Inhaler** These are usually grey in colour. It is usually taken on a regular basis. **Your additional inhaler is:**
Preventer A preventer (brown/red/orange) is an inhaler which reduces inflammation in your airways that occurs with your chest condition. These should not be used to relieve sudden attacks of wheeze and breathlessness. As this is a steroid inhaler, it is important to rinse your mouth after using it. **Your preventer inhaler is:**	**Combined Preventer** Your Doctor may find it appropriate to prescribe a combination inhaler which can include a protector and preventer in one inhaler. **Your combination inhaler is:**	**Tablets to help your breathing:**

*based on Southern Health & Social Care Trust (N.I.) COPD Team Self Management Plan 2008.

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