NICE National Institute for Health and Care Excellence

NICE Pathways

Chronic obstructive pulmonary disease overview

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/chronic-obstructive-pulmonary-disease
NICE Pathway last updated: 09 May 2011

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.

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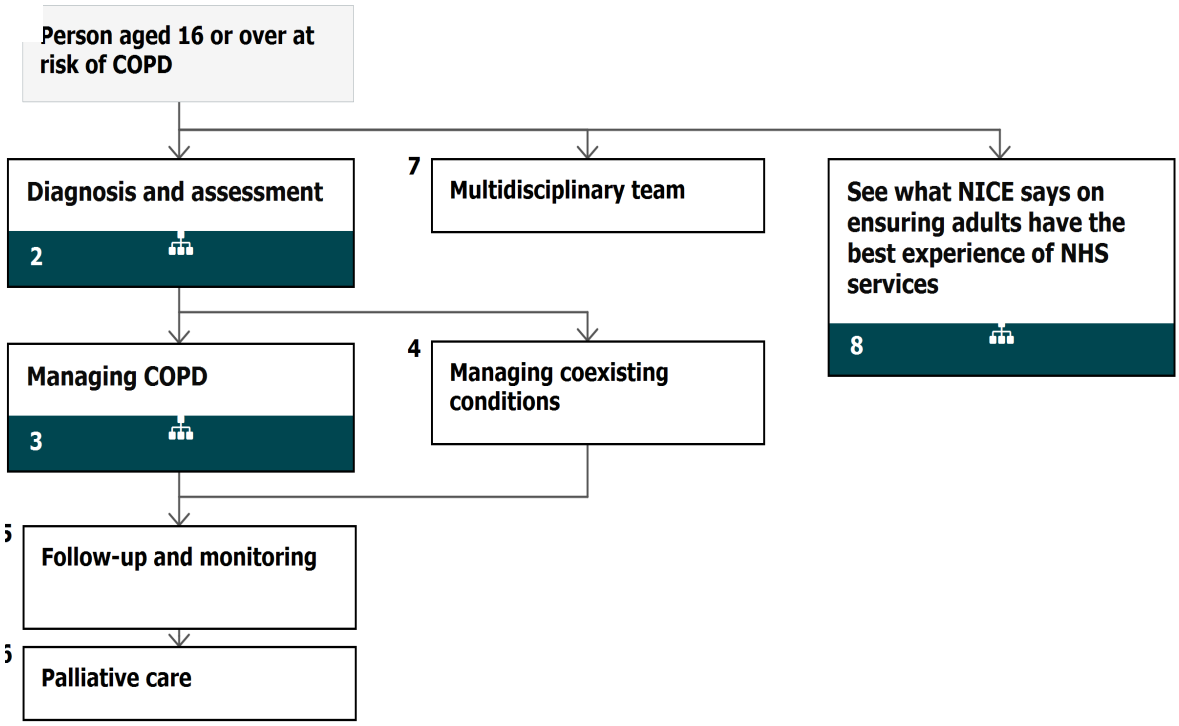

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1 Person aged 16 or over at risk of COPD

No additional information

2 Diagnosis and assessment

See Chronic obstructive pulmonary disease / Diagnosing and assessing COPD

3 Managing COPD

See Chronic obstructive pulmonary disease / Managing COPD

4 Managing coexisting conditions

NICE has produced a visual summary on non-pharmacological management and use of inhaled therapies for COPD.

Alpha-1 antitrypsin deficiency

Alpha-1 antitrypsin replacement therapy is not recommended for people with alpha-1 antitrypsin deficiency (see also when to refer).

Pulmonary hypertension

Do not offer the following treatments solely to manage pulmonary hypertension caused by COPD, except as part of a randomised controlled trial:

- bosentan
- losartan
- nifedipine
- nitric oxide
- pentoxifylline
- phosphodiesterase-5 inhibitors
- statins.

See the NICE guideline to find out why we made this recommendation and how it might affect

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practice.

Cor pulmonale

Suspect a diagnosis of cor pulmonale for people with:

- peripheral oedema (swelling)
- a raised venous pressure
- a systolic parasternal heave
- a loud pulmonary second heart sound.

It is recommended that the diagnosis of cor pulmonale is made clinically and that this process should involve excluding other causes of peripheral oedema (swelling).

Ensure that people with cor pulmonale caused by COPD are offered optimal COPD treatment, including advice and interventions to help them stop smoking. For people who need treatment for hypoxia, see long-term oxygen therapy.

Oedema associated with cor pulmonale can usually be controlled symptomatically with diuretic therapy.

Do not use the following to treat cor pulmonale caused by COPD:

- alpha-blockers
- angiotensin-converting enzyme inhibitors
- calcium channel blockers
- digoxin (unless there is atrial fibrillation).

See the NICE guideline to find out why we made these recommendations and how they might affect practice.

Low body mass index

Calculate BMI for people with COPD; for people with a low BMI, give nutritional supplements to increase their total calorific intake and encourage them to exercise to augment the effects of nutritional supplementation.

For guidance on nutrition support, see NICE's recommendations on nutrition support in adults.

For information on weight loss, see what NICE says on obesity.

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Multiple long-term conditions

For guidance on the management of multimorbidity in people with COPD, see NICE's recommendations on multimorbidity.

5 Follow-up and monitoring

Follow-up

Follow-up of all people with COPD should include:

- highlighting the diagnosis of COPD in the case record and recording this using Read codes on a computer database
- recording the values of spirometric tests performed at diagnosis (both absolute and percent predicted)
- offering advice and treatment to help them stop smoking, and referral to specialist stop smoking services (see NICE's recommendations on stop smoking interventions and services)
- recording the opportunistic measurement of spirometric parameters (a loss of 500 ml or more over 5 years will show which people have rapidly progressing disease and may need specialist referral and investigation).

Review people with COPD at least once per year and more frequently if indicated, and cover the issues listed in the table on summary of follow-up of people with COPD in primary care [See page 8].

For most people with stable severe COPD, regular hospital review is not necessary, but there should be locally agreed mechanisms to allow rapid access to hospital assessment when needed.

When people with very severe COPD are reviewed in primary care they should be seen at least twice per year, and specific attention should be paid to the issues listed in the table on summary of follow-up of people with COPD in primary care [See page 8].

Specialists should regularly review people with severe COPD who need interventions such as long-term NIV.

Telehealth monitoring

Do not offer routine telehealth monitoring of physiological status as part of management of

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stable COPD.

See the NICE guideline to find out why we made this recommendation and how it might affect practice.

6 Palliative care

When appropriate, use opioids to relieve breathlessness in people with end-stage COPD that is unresponsive to other medical therapy.

When appropriate, use benzodiazepines, tricyclic antidepressants, major tranquillisers and oxygen for breathlessness in people with end-stage COPD that is unresponsive to other medical therapy.

People with end-stage COPD and their family members or carers (as appropriate) should have access to the full range of services offered by multidisciplinary palliative care teams, including admission to hospices.

For standards and measures on palliative care, see the NICE quality standard on end of life care for adults.

For guidance on care for people in the last days of life, see NICE's recommendations on end of life care for people with life-limiting conditions.

7 Multidisciplinary team

COPD care should be delivered by a multidisciplinary team.

When defining the activity of the multidisciplinary team, think about the following functions:

- assessment (including performing spirometry, assessing which delivery systems to use for inhaled therapy, the need for aids for daily living and assessing the need for oxygen)
- care and treatment, including
    - pulmonary rehabilitation
    - identifying and managing anxiety and depression
    - advising people on relaxation techniques
    - dietary issues
    - exercise

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- - social security benefits and travel
  - hospital-at-home/early discharge schemes
  - NIV and palliative care
- advising people on self-management strategies
- identifying and monitoring people at high risk of exacerbations and undertaking activities to avoid emergency admissions
- education for people with COPD, their carers, and for healthcare professionals.

It is recommended that the multidisciplinary COPD team includes respiratory nurse specialists.

8 See what NICE says on ensuring adults have the best experience of NHS services

See Patient experience in adult NHS services

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Summary of follow-up of people with COPD in primary care

	Mild/moderate/severe (stages 1 to 3)	Very severe (stage 4)
Frequency	At least annual	At least twice per year

Clinical assessment	• Smoking status and motivation to quit
	• Adequacy of symptom control:
	  – breathlessness
	  – exercise tolerance
	  – estimated exacerbation frequency
	• Need for pulmonary rehabilitation
	• Presence of complications
	• Effects of each drug treatment
	• Inhaler technique
	• Need for referral to specialist and therapy services
		• Smoking status and motivation to quit
		• Adequacy of symptom control:
		  – breathlessness
		  – exercise tolerance
		  – estimated exacerbation frequency
		• Presence of cor pulmonale
		• Need for LTOT
		• Person with COPD's nutritional state
		• Presence of depression
		• Effects of each drug treatment
		• Inhaler technique
		• Need for social services and occupational therapy input
		• Need for referral to specialist and therapy services
		• Need for pulmonary rehabilitation

Measurements to make	• FEV1 and FVC • Calculate BMI • MRC dyspnoea score	• FEV1 and FVC • Calculate BMI • MRC dyspnoea score • SaO_2

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Glossary

Acute exacerbations of COPD

(a sustained worsening of the person's symptoms from their usual stable state which is beyond normal day-to-day variations, and is acute in onset: commonly reported symptoms are worsening breathlessness, cough, increased sputum production and change in sputum colour)

COPD exacerbation

(a sustained worsening of the person's symptoms from their usual stable state which is beyond normal day-to-day variations, and is acute in onset: commonly reported symptoms are worsening breathlessness, cough, increased sputum production and change in sputum colour)

Exacerbation of COPD

(a sustained worsening of the person's symptoms from their usual stable state which is beyond normal day-to-day variations, and is acute in onset: commonly reported symptoms are worsening breathlessness, cough, increased sputum production and change in sputum colour)

Exacerbations of COPD

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Acute exacerbation of COPD

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Asthmatic features/features suggesting steroid responsiveness

(this includes any previous, secure diagnosis of asthma or of atopy, a higher blood eosinophil count, substantial variation in FEV1 over time [at least 400 ml] or substantial diurnal variation in peak expiratory flow [at least 20%])

ASA

American Society of Anesthesiologists

ATS

American Thoracic Society

BODE

body mass index, airflow obstruction, dyspnoea and exercise capacity

BTS

British Thoracic Society

CAT

COPD assessment test

CEN

Comité Européen de Normalisation (European Committee for Standardisation)

COPD

chronic obstructive pulmonary disease

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cor pulmonale

(in the context of this guidance, the term 'cor pulmonale' has been adopted to define a clinical condition that is identified and managed on the basis of clinical features; this clinical syndrome of cor pulmonale includes patients who have right heart failure secondary to lung disease and those in whom the primary pathology is retention of salt and water, leading to the development of peripheral oedema)

ECG

electrocardiogram

ERS

European Respiratory Society

FEV1

forced expiratory volume in 1 second

FVC

forced vital capacity

GOLD

global initiative for chronic obstructive lung disease

ICS

inhaled corticosteroid

LABA

long-acting beta2 agonist

LAMA

long-acting muscarinic antagonist

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LTOT

long-term oxygen therapy

MRC

Medical Research Council

Mild or no hypoxaemia

(people who are not taking long-term oxygen therapy and who have a mean PaO_2 greater than 7.3 kPa)

NIV

non-invasive ventilation

NRT

nicotine replacement therapy

PaO2

partial pressure of oxygen in arterial blood

PaCO2

partial pressure of carbon dioxide in arterial blood

PEF

peak expiratory flow

SABA

short-acting $beta_2$ agonist

SAMA

short-acting muscarinic antagonist

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SaO2

oxygen saturation of arterial blood

Theophylline

(here, the term theophylline refers to slow-release formulations of the drug)

TLCO

carbon monoxide lung transfer factor

Sources

Chronic obstructive pulmonary disease in over 16s: diagnosis and management (2018) NICE guideline NG115

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

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Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in

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their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

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