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1 Background information

Quick info:

Scope:
- early detection, assessment and diagnosis of Chronic Obstructive Pulmonary Disease (COPD) in adults

Out of scope:
- children and adolescents
- management in primary and secondary care, and criteria for specialist referral
- principles of palliative care in COPD

Definition:
- COPD is characterised by airflow obstruction [1,2,3]:
  - post bronchodilator FEV1/FVC (forced expiratory volume in 1 second/forced vital capacity) ratio of less than 0.7 confirms the presence of airflow limitation [3,10]
  - airflow obstruction is usually progressive, not fully reversible [1,2,3,4], and does not change over several months [1,3]
- COPD is the preferred term for patient with airflow obstruction who were previously defined as having [1,3]:
  - chronic bronchitis
  - emphysema

Incidence and prevalence [6-7]:
- according to the World Health Organisation, COPD afflicts some 50 million people around the world, and is the fourth leading killer – causing nearly 3 million deaths every year
- COPD has a substantial impact on the health of New Zealanders. Although often undiagnosed, it affects an estimated 15% of the adult population over the age of 45 years (at least 200 000 New Zealanders)
- the prevalence of COPD in New Zealand adults (aged 45+) is approximately 5.5%
- there was no significant difference in the prevalence in males (4.8%; 3.5 – 6.1) and females (6%; 4.8 – 7.3)
- there was no significant difference between Maori and non-Maori
- the incidence of COPD increased with age for both genders
- more than 85% of the burden of COPD arises from tobacco smoking, with contributions from cannabis use and dust exposure in the workplace

Whanganui
- COPD diagnosis recorded under GP’s patient management systems in Whanganui show an increase in volumes for patients diagnosed with COPD in the last 2 years. The increases in the first and second years were 4.5% and 7.2%, respectively, resulting in an overall 12% overall increase.
- these volumes reflect data from practices enrolled with the local PHO, which represents around 85% of the population.
- these increases could be caused by a number of factors, such as improved awareness of respiratory conditions within general practice; changes in the way general practices record diagnostic data; actual rises in the prevalence of COPD; and rollout of similar respiratory pathways which increase focus on these diseases. It is unclear whether these increases reflect a real rise in prevalence.
- the highest age groups diagnosed with COPD were:
  - 60-64yrs and 65-69yrs for non-Maori
  - 55-59yrs and 60-64yrs for Maori.
- the incidence of COPD increased with age for both Maori and non-Maori

Prognosis [7]:
- COPD is the 4th leading cause of death after cancer, heart disease and stroke
- COPD is ranked 2nd in men and 5th in women with regards to its health impact
- COPD is an irreversible disease but is almost entirely preventable by avoiding exposure to tobacco smoke. Over 15% of all smokers are likely to become affected

Risk factors [1-3]:
- smoking
- occupational exposure
- increasing age
2 Information resources for patients & carers

Quick info:
Print or email this list of resources and provide to consumer.

Self-management:
- patients should be advised to contact their GP for review ASAP after self administering medications as per the Personal Action Plan:
  - Personal Action Plan and Self Assessment Form

Resources for consumers:
- COPD - Breathing during exercise, recovery breathing and positioning
- Don't Forget to Breathe - a patient guide
- Health Navigator NZ
  - contains information on a wide range of health topics including COPD and Asthma
- The Asthma and Respiratory Foundation website
  - provides comprehensive information for anyone wanting current information to help manage a respiratory condition
- better living with COPD - a patient guide
- Ministry of Health - COPD
- information on inhalers
- What is a spacer?
- Oxygen Therapy at Home
- Energywise
- Healthy Homes - Can be referred to the Whanganui Regional Health Network

Support Groups:
- COPD support group - Contact Respiratory Nurses on 06 3483266
  - the groups are for adults with lung conditions such as Asthma, Chronic Bronchitis and Emphysema
  - there is no charge to join the groups which offer the opportunity to:
    - meet others with a common interest in managing their lung condition
    - going on social outings
- Online support network world wide for COPD

Pulmonary rehabilitation
Pulmonary rehabilitation should be offered to all appropriate patients with COPD, including those who have had a recent hospitalisation for an acute exacerbation.
Pulmonary rehabilitation aims to:
- reduce symptoms
- improve quality of life (QoL)
- increase physical and emotional participation in everyday activities
- provide dietary advice for patients with COPD who are either under weight or over weight

Click here for a brochure on Whanganui DHB Pulmonary Rehabilitation Programme.

Breath Easy group - Green Prescription, phone number 063492325.

Patient information:
- specific information packages should be developed for patients with COPD:
  - packages should take into account the different needs of patients at different stages of their disease
  - do not use programmes designed for asthma
- all patients should be advised about reducing risk factors
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• patients should be provided with the following patient education:
  • information about the nature of COPD
  • instructions on how to use inhalers
  • recognition and treatment of exacerbations
  • strategies for minimising dyspnoea
• patients with stage IV COPD should be provided with additional patient education, i.e:
  • information about complications
  • advance directives and end of life decisions
• patient Information for patients with COPD on long term oxygen therapy - Oxygen Therapy at Home

For further cessation support, advice and information patients can contact a regional service:

• Nga Taura Tuhono - Regional Stop Smoking Service. Phone number 0800 200 249
• Consumers can drop into open access clinics:
  • The Clinic, 49 Ingestre Street, Whanganui
  • Te Oranganui, 57 Campbell Street, Whanganui

Recommended Apps

• COPD Support – Suggested Apps for Smart Phones

3 Information resources for health providers

Quick info:

Resources for health care professionals:

• Modified Medical Research Council (mMRC) dyspnoea scale
• Thatcher and Peto graph of natural history of predicted lung function
• COPD versus Asthma
• BPAC - COPD
• COPD prescribing tool

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Health Literacy

Three step model for improving health literacy:

• Find out what people know
• Build people’s health literacy (knowledge and skills) to meet their needs
• Check you were clear

Education

Asthma and COPD on line course:

• Asthma & COPD Fundamentals eLearning Series
• Asthma & COPD Fundamentals Course
• Goodfellow Unit eLearning Courses
• COPD and Nursing Courses

4 Updates to this care map

Quick info:

Date of publication:
5 Hauora Maori

Quick info:
As a practitioner you will work with Maori whanau/families. Each Maori whanau is diverse with their own set of values and beliefs, inherited, practised and passed down from generation to generation.
There are some important things that you should be mindful of when working with Maori individuals and their whanau from a holistic approach to working in a Whanau ora or family / whanau centred way.
Key enablers that you should be aware of when working with Maori whanau/families are:
- building relationships and gaining trust
- effective communication with whanau /families
- understanding and involving whanau/ families in the treatment planning and care management
- practical things to be mindful of when working with Maori whanau so that you do not breech Tikanga/Principles and practices that are important in Te Ao Maori/the Maori world
Common terms and definitions are noted here.

6 Pasifika

Quick info:
Our pasifika community:
- is a diverse and dynamic population
  - more than 22 nations represented in New Zealand
  - each with their own unique culture, language, history, and health status
  - share many similarities which we have shared with you here in order to help you work with pasifika patients more effectively
The main Pacific nations in New Zealand are
- Samoa, Cook Islands, Fiji, Tonga, Niue, Tokelau and Tuvalu
Acknowledging The FonoFale Model (pasifika mode of health) when working with pasifika peoples and families.
Acknowledging general pacific guidelines when working with pasifika peoples and families:
- cultural protocols and greetings
- building relationships with your pacific patients
- involving family support, involving religion, during assessments and in the hospital
- home visits
- pasifika phrasebook

7 COPD Suspected

Quick info:
Consider Chronic Obstructive Pulmonary Disease (COPD) in patients with:
- dyspnoea
- chronic cough
- sputum production
- and/or a history of exposure to risk factors for the disease especially smokers
Use the Modified Medical Research Council (mMRC) dyspnoea scale to assess functional impact of breathlessness during the early stages of COPD the patient may have no or minimal symptoms; airflow limitation, however, may be present in the absence of symptoms.
Clinical presentation of COPD includes:
- persistent and progressive dyspnoea
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Systemic features of COPD include [2,3]:
- cachexia loss of fat free mass
- skeletal muscle wasting
- osteoporosis
- depression
- increased risk of cardiovascular disease (CVD)

Additional features of severe COPD include [2]:
- weight loss
- anorexia
- cough syncope
- rib fractures caused by coughing spells
- pedal oedema symptom of cor pulmonale
- increasing panic / depression and anxiety

8 Encourage smoking cessation

Quick info:
The most critical intervention is smoking cessation. All patients with COPD should be encouraged to stop smoking, and offered help to do so at every opportunity [3].

Telling smokers their lung age has been shown to significantly improve the likelihood of them quitting smoking [16]. Click here for Thatcher and Peto graph of natural history of predicted lung function decline in smokers, non-smokers and ex-smokers.

‘ABC’ is a memory aid for health care workers to understand the key steps to helping people who smoke:
- A. Ask all people about their smoking status and document this
- B. Provide Brief advice to stop smoking to all people who smoke, regardless of their desire or motivation to quit
- C. Make an offer of, and refer to or provide, evidence based cessation treatment

In 2009 [15]:
- smoking rates for Maori (44%) were more than double the rate of smoking for non-Maori (18%)
- the smoking rate for Maori females (48.3%) was almost three times that for non-Maori females (16.2%), rates for Maori males (39.3%) were nearly double of non-Maori males (20.3%)

For further support, advice and information patients can contact:
- auahi kore - cessation support - Te Oranganui Iwi Health Authority
- ring Quitline 0800 778 778 or visit their website (Quitline Website is mobile compatible)
- ring The Quit Clinic 0800 200 249 or visit their website
- ring Aukati KaiPaipa 0800 742 666 for a free face-to-face kaupapa Maori service

9 Spirometry & other investigations

Quick info:
Demonstrating airflow obstruction is critical in supporting the diagnosis of chronic obstructive pulmonary disease (COPD) [2,3]:
- post-bronchodilator FEV₁/FVC (forced expiratory volume in 1 second/forced vital capacity) ratio of less than 0.7 confirms the presence of airflow limitation
- severity of airflow limitation is measured by post-bronchodilator FEV₁

NB: caution is required in the elderly. A number of published guidelines define airflow obstruction as a fixed ratio of FEV₁/FVC<0.7 rather than the lower limit of normal (LLN). However, this results in over-diagnosis of COPD in the older age group:
- spirometry is the only accurate method of measuring airflow obstruction in COPD
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Other investigations

Consider the following investigations as part of the diagnosis and assessment of COPD:

- chest X-ray (CXR):
  - CXR may exclude other pathologies [1,2,9]:
    - causes of a chronic cough e.g:
      - bronchial carcinoma
      - tuberculosis
      - bronchiectasis
      - interstitial lung disease

- haematology:
  - full blood count (FBC) to identify [3]:
    - anaemia [1,3] causing breathlessness [1]
    - eosinophilia, eg. may suspect asthma [1]
    - polycythaemia [2,3] which may indicate chronic hypoxia [1,5]:
      - NB: polycythaemia cannot be assumed to be secondary without measurement of arterial blood gas tensions [10]

- body mass index (BMI):
  - should be performed on initial diagnostic evaluation [3]
  - PHO referral criteria for underweight patients:
    - BMI <18.5kg/m² with unintentional weight loss of 5% in one month
  - PHO referral criteria for overweight patients:
    - BMI >25kg/m²

10 Interpretation of spirometry results

Quick info:

Chronic obstructive pulmonary disease (COPD) is an irreversible airway disease [1,2,3,4]:

- interpretation is undertaken by General Practice Clinicians with assistance from specialist services (where requested)

Measures included in Spirometry results [14]:

- Forced Vital Capacity (FVC): volume of air exhaled after full inspiration
- Forced Expiratory Volume in One Second (FEV₁): volume of air exhaled in first one second of expiration. Important for determining severity of COPD
- FEV₁ / FVC ratio: ratio of vital capacity exhaled in one second, expressed as percentage. Used to detect airways obstruction
- % Predicted: uses the normal values for age, sex, and height

11 Obstructive

Quick info:

If the FEV₁/FVC ratio is less than 0.7 or less than the lower limit of normal (included with the test report), an obstructive defect is present. Determine the severity of the obstructive defect by looking at the FEV₁ as a percent predicted.

Click here to download a table illustrating suggestive features of COPD versus Asthma.

12 Restrictive

Quick info:

Common causes of a restrictive spirometric pattern [14]:

- obesity
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Medicine > Thoracic medicine > Chronic obstructive pulmonary disease (COPD)

- parenchymal lung disease: pulmonary fibrosis / interstitial lung disease
- neuro-muscular disease
- pleural disorders
- miscellaneous including heart failure and pneumonia

Testing for restrictive spirometric pattern:

- if the FEV₁/FVC ratio is greater than 0.7 or greater than the lower limit of normal (LLN), then spirometry is either normal or a restrictive defect may be present
- when the FVC is above the LLN, a restrictive pattern is excluded
- when the FVC is below the LLN, a restrictive pattern is suggested. Full lung function testing may be appropriate, depending on the clinical situation. Restrictive patterns seen on spirometric testing are correct only 50% of the time

13 Normal

Quick info:
Consider the following differential diagnosis:

- congestive cardiac failure [1,2,3] symptoms include:
  - breathlessness when lying flat
  - history of ischaemic heart disease
  - fine lung crackles [1]

Also consider:

- bronchiectasis [1,2,3]:
  - copious sputum, frequent chest infection, history of childhood pneumonia, coarse lung crackles [1]
- carcinoma of the bronchus [3]:
  - haemoptysis, weight loss, hoarseness [1]
- pneumonia [3]
- pneumothorax [3]
- interstitial lung disease dry cough, fine crackles [1]
- recurrent pulmonary embolism [10]
- tuberculosis [2]
- obstructive sleep apnoea [1]
- upper airway obstruction [3]

NB: Some of these conditions may coexist with chronic obstructive pulmonary disease (COPD) [1].

Normal spirometry does not exclude asthma. Asthmatic patients will have normal spirometry if well controlled.

14 Asthma diagnosis

Quick info:
Click here to download table illustrating suggestive features of COPD versus Asthma. Asthma is a reversible airways disease. There may be a subset (<5%) of patients with chronic symptoms and obstructive spirometry who have chronic severe asthma. If clinical assessment suggests asthma because of above criteria, it is worth giving 2 weeks of 40mg daily of oral prednisone to assess its effect on spirometry.

15 COPD diagnosis

Quick info:
There is no single diagnostic test for chronic obstructive pulmonary disease (COPD) [3]. Diagnosis is based on clinical judgement based on a combination of [9]:

- signs and symptoms:
  - exertional breathlessness
Chronic Obstructive Pulmonary Disease (COPD) - Suspected

• chronic cough
• regular sputum production
• wheeze
• smoking exposure
• confirmation of the presence of airflow obstruction using spirometry

If there is no doubt about COPD diagnosis, start treatment [3].