The ABC of COPD Management – Divide and Conquer

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Speaker declaration/conflicts of interest

- Received travel/CME funding and Directors fees from Auckland PHO
- Received travel grants, conference support and honoraria for talks on asthma, COPD and smoking cessation from GSK, Boehringer Ingelheim and AstraZeneca
- Received research funding from Pharmalink, Roche and NZ Heart Foundation
- Received travel grants, conference support and independent consultant fees from PHARMAC
- Medical Director of Marsden Medical Associates
Learning objectives

• To consider COPD not just as a deterioration in lung function *per se*, but as a spectrum of symptoms and exacerbation risk to help individually characterise the COPD patient in the community – to consider the Global Initiative for the management of Chronic Obstructive Lung Disease (GOLD) update

• To match the right medicine to the right patient at the right time

• To consider diagnosis of Asthma-COPD Overlap Syndrome (ACOS)

• To identify when the use of ICS/LABA in COPD treatment is appropriate and arrive at a coherent treatment/management plan
COPD: Some definitions

• COPD is a common, preventable and treatable disease that is characterised by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases.

• Exacerbations and co-morbidities contribute to the overall severity in individual patients.
Risk Factors for COPD

- Cigarette smoke
- Occupational dust and chemicals
- Environmental tobacco smoke (ETS)
- Indoor and outdoor air pollution

Ageing Populations

Genes
Infections
Socio-economic status
“COPD is highly prevalent, underdiagnosed, undertreated and underperceived” Bart Celli, 2008

- Affects 8% of adult population
- Affects 20% of adult smokers
- Affects 30% of adult general medical admissions
- Affects 50% of pneumonia over 65 years old

COPD and asthma are very different diseases

Diagnosis of COPD

SYMPTOMS
- Shortness of breath
- Chronic cough
- Sputum

EXPOSURE TO RISK FACTORS
- Tobacco
- Occupation
- Indoor/Outdoor pollution

SPIROMETRY
Required to establish diagnosis
Why do COPD patients get diagnosed?

1. Because they have a lot of symptoms?
2. Because their doctor did spirometry?
3. Because they had exacerbations?
**Healthy Lungs for Life**

**QUESTIONNAIRE**

Your responses will be kept in the strictest confidence and used for statistical purposes only. We appreciate your time and efforts. Thank you.

1. Gender: [ ] Male  [ ] Female
2. Age: [ ] 20  [ ] 21 - 34  [ ] 35 - 44  [ ] 45 - 54  [ ] 55 - 64  [ ] 65 - 74  [ ] > 75 Years
3. Place of residence:
   [ ] [ ] [ ] [ ] [ ] [ ] [ ]
4. Do you smoke?
   [ ] Yes  [ ] No
   [ ] How many cigarettes per day?...
5. Do you have a history of smoking?
   [ ] Yes  [ ] No
6. Do you cough more than the average person?
   [ ] Yes  [ ] No
7. Do you cough up phlegm or mucus?
   [ ] Yes  [ ] No
8. Do you suffer from shortness of breath?
   [ ] Yes  [ ] No
   [ ] After running or walking a short distance
   [ ] After eating or drinking
   [ ] After having sex
9. Have you had an airway / lung infection for an extended period of time?
   [ ] Yes  [ ] No
10. Do you suffer from any other airway / lung problems?
    [ ] Yes  [ ] No
11. Did you know what a lung function test was before?
    [ ] Yes  [ ] No
12. Have you had a lung function test before?
    [ ] Yes  [ ] No
13. Other comments?

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**LUNG FACT SHEETS**

**Testing your lungs: spirometry**

- **What is spirometry?**
  - Spirometry is a test of how well you can breathe and can help in the diagnosis of different lung diseases. The test is painless and usually takes less than 10 minutes, but requires some hard blowing. You breathe into a small device called a spirometer, which measures the amount of air you can blow out of your lungs and how fast this test can be done.

- **Should you take a test?**
  - Yes, if:
    - You are over the age of 40 or have been a smoker.
    - You cough a lot.
    - You become short of breath when walking.
    - You are worried about the health of your lungs.
    - You are already receiving treatment for a lung disease.

- **What happens during the test?**
  - The nurse or doctor will show you how to blow into the spirometer before you begin. It is important that you put as much effort into the test as you possibly can, otherwise the results will not be accurate. You will be asked to blow three or more times into the spirometer.

When holding the spirometer, you must:

- **Inhale** as deeply as you can and place your lips tightly around the mouthpiece.
- Try to inhale and blow out your air as quickly as possible.
- Keep blowing out until your lungs are empty and the doctor or nurse tells you to stop, usually after at least 6 seconds.

- **Exhale** as slowly as you can and place your lips tightly around the mouthpiece.
- Try to exhale and blow out your air as quickly as possible.
- Keep blowing out until your lungs are empty and the doctor or nurse tells you to stop, usually after at least 6 seconds.

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1. A post-bronchodilator FEV$_1$/FVC < 0.70 confirms the presence of airflow limitation

2. Spirometry should be performed after the administration of an adequate dose of a short-acting inhaled bronchodilator to minimise variability

3. Where possible, values should be compared to age-related normal values to avoid overdiagnosis of COPD in the elderly
Classification of severity of airflow limitation in COPD*

In patients with FEV$_1$/FVC < 0.70:

- **GOLD 1: Mild**  
  FEV$_1$ > 80% predicted

- **GOLD 2: Moderate**  
  50% < FEV$_1$ < 80% predicted

- **GOLD 3: Severe**  
  30% < FEV$_1$ < 50% predicted

- **GOLD 4: Very Severe**  
  FEV$_1$ < 30% predicted

*Based on Post-Bronchodilator FEV$_1$
What is the best advice you can offer to a newly diagnosed COPD patient?
Rate of FEV$_1$ decline increased with time in susceptible smokers

Smoking vs. not smoking

Decline in lung function with COPD severity

Development and progression of COPD

FEV\textsubscript{1} vs. symptoms

Smoke from tobacco and biomass fuel contains ROS, toxins, and particulate matter

Viral and bacterial infections

Signs and symptoms

- Asymptomatic
- Progressive dyspnoea
- Systemic disease Comorbidities
- Respiratory failure
- Death

Stage I

Stage II

Stage III

Stage IV

Age (years)

FEV\textsubscript{1} (% of predicted)
Poor correlation between quality of life measures and FEV$_1$ severity

- SGRQ score (CAT)
- FEV$_1$ (% predicted)
- Breathless walking on level ground
- Upper limit of normal

$r = -0.23$, $P < 0.0001$
A symptom based approach in COPD

**HEED study**

- Lung function alone is a poor predictor of symptoms
- Reduced exercise tolerance was seen in 70% with mild disease (%predFEV\(_1\)>80\%) and 74% with moderate disease (%predFEV\(_1\) 50-80\%)

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GOLD 2015 COPD “phenotypes”

- Does not limit COPD classification to spirometric assessment exclusively
- Incorporates exacerbation frequency and functionality assessment
- Classification started in 2011 and continues to evolve
“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”
Assessment of symptoms in COPD

- **COPD Assessment Test (CAT)**
  - An 8-item measure of health status impairment in COPD [www.catestonline.org](http://www.catestonline.org)

- **Clinical COPD Questionnaire (CCQ)**
  - Self-administered questionnaire developed to measure clinical control in patients with COPD [www.ccq.nl](http://www.ccq.nl)
• Modified British Medical Research Council (mMRC) Questionnaire
  - Breathlessness measurement
  - Relates well to other measures of health status and predicts future mortality risk
## Modified MRC Breathlessness Score

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description of Breathlessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I only get breathless with strenuous exercise.</td>
</tr>
<tr>
<td>1</td>
<td>I get short of breath when hurrying on level ground or walking up a slight hill.</td>
</tr>
<tr>
<td>2</td>
<td>On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace.</td>
</tr>
<tr>
<td>3</td>
<td>I stop for breath after walking about 100 yards or after a few minutes on level ground.</td>
</tr>
<tr>
<td>4</td>
<td>I am too breathless to leave the house or I am breathless when dressing.</td>
</tr>
</tbody>
</table>
The CAT questionnaire (www.catestonline.org)

COPD Self Assessment Test

Score/40
- mild 0-10
- mod 10-15
- severe 15-25
- very severe 25-40

Basis on which to establish
- overall disability
- specific disabilities and
- response to treatments
The CAT questionnaire (www.catestonline.org)

COPD Self Assessment Test

Score/40
- mild 0-10
- mod 10-15
- severe 15-25
- very severe 25-40

Basis on which to establish
- overall disability
- specific disabilities and
- response to treatments
# CAT score: Patient profile

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
<th>Description</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I never cough</td>
<td>0</td>
<td>I cough all the time</td>
<td>1</td>
</tr>
<tr>
<td>I have no phlegm (mucus) in my chest at all</td>
<td>X</td>
<td>My chest is completely full of phlegm (mucus)</td>
<td>1</td>
</tr>
<tr>
<td>My chest does not feel tight at all</td>
<td>0</td>
<td>My chest feels very tight</td>
<td>2</td>
</tr>
<tr>
<td>When I walk up a hill or one flight of stairs I am not breathless</td>
<td>X</td>
<td>When I walk up a hill or one flight of stairs I am very breathless</td>
<td>4</td>
</tr>
<tr>
<td>I am not limited doing any activities at home</td>
<td>0</td>
<td>I am very limited doing activities at home</td>
<td>3</td>
</tr>
<tr>
<td>I am confident leaving my home despite my lung condition</td>
<td>X</td>
<td>I am not at all confident leaving my home because of my lung condition</td>
<td>4</td>
</tr>
<tr>
<td>I sleep soundly</td>
<td>X</td>
<td>I don’t sleep soundly because of my lung condition</td>
<td>2</td>
</tr>
<tr>
<td>I have lots of energy</td>
<td>0</td>
<td>I have no energy at all</td>
<td>5</td>
</tr>
</tbody>
</table>

**Scoring range 0-40**

**Total score**: 22

**CAT Score/40**
- Mild: 0-10
- Mod: 10-15
- Severe: 15-25
- Very severe: 25-40

**Severe**
Types of Exacerbation

• **Mild**
  - Worse symptoms possibly requiring more reliever

• **Moderate**
  - Sustained worsening of symptoms (2-3 days)
    - Cough and sputum production
    - Breathlessness and wheeze
  - Needs treatment with antibiotics and/or corticosteroids
  - Unscheduled ED / A and M or urgent surgery visit

• **Severe**
  - As for moderate but requires hospitalization
Is the patient a frequent exacerbator?

The ‘Frequent Exacerbator Phenotype’ - ECLIPSE

Susceptibility to Exacerbation in Chronic Obstructive Pulmonary Disease
John R. Hurst, Jørgen Vestbo, Antonio Anzueto, Nicholas Locantore, Hana Müllerova, Ruth Tal-Singer, Bruce Miller, David A. Lomas, Alvar Agusti, William MacNee, Peter Calverley, Stephen Rennard, Emiel F.M. Wouters and Jadwiga A. Wedzicha

New England Journal of Medicine
2010;363:1128-38

ECLIPSE showed that survival curves relate to prior hospitalisation history.
What are the consequences of exacerbations and why is prevention important?

EXACERBATIONS

- Negative impact on quality of life
- Increased economic costs
- Impact on symptoms and lung function
- Increased mortality
- Accelerated lung function decline
TORCH showed patients who exacerbated more frequently had a faster FEV$_1$ decline.

Adjusted for smoking status, gender, baseline FEV$_1$, region, BMI, prior exacerbations, treatment, time, time by treatment and covariate by time.

Celli BR et al AJRCCM. 2008; 178 (4): 332-8
Phenotype approach to COPD

ECLIPSE study

• “Frequent exacerbator”* is a specific type of COPD that requires aggressive treatment with combination therapy (preferably fixed dose of ICS and LABA)

• “Frequent exacerbators” may be found in those with moderate COPD (22%) and not just severe disease (30-50%)

*≥2 exacerbations per year (or one hospitalisation)

Combined assessment of COPD

Global Strategy for Diagnosis, Management and Prevention of COPD

Risk (GOLD Classification of Airflow Limitation)

- 1 (not leading to hospital admission)
- 2 or 1 leading to hospital admission

Symptoms
- CAT < 10
- mMRC 0–1

Breathlessness
- CAT > 10
- mMRC ≥ 2

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GOLD: Defined patient groups

- Poor spirometry (FEV%pred≤50%) or 2+ exacerbations/yr (AB/pred/yr) but ET = manages hills ok, Good QOL CAT<10

- Reduced spirometry (FEV%pred>50%) or 0-1 exacerbation/yr (AB/pred/yr) but ET = manages hills ok, Good QOL CAT>10

- Mild (early)
  - mMRC 0-1
  - CAT <10

- "Symptomatic"
  - mMRC ≥2
  - CAT ≥10

- "Exacerbator"
- Severe (both)

- Poor spirometry (FEV%pred≤50%) or 2+ exacerbations/yr (AB/pred/yr) and ET≥ SOB up slight hills, Poor QOL CAT≥10
## Combined Assessment of COPD

When assessing risk, choose the highest risk according to GOLD grade or exacerbation history. One or more hospitalizations for COPD exacerbations should be considered high risk.

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### Table: Spirometric Classification and Exacerbations per Year

<table>
<thead>
<tr>
<th>Patient</th>
<th>Characteristic</th>
<th>Spirometric Classification</th>
<th>Exacerbations per year</th>
<th>CAT</th>
<th>mMRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Low Risk Less Symptoms</td>
<td>GOLD 1-2</td>
<td>≤ 1</td>
<td>&lt; 10</td>
<td>0-1</td>
</tr>
<tr>
<td>B</td>
<td>Low Risk More Symptoms</td>
<td>GOLD 1-2</td>
<td>≤ 1</td>
<td>≥ 10</td>
<td>≥ 2</td>
</tr>
<tr>
<td>C</td>
<td>High Risk Less Symptoms</td>
<td>GOLD 3-4</td>
<td>≥ 2</td>
<td>&lt; 10</td>
<td>0-1</td>
</tr>
<tr>
<td>D</td>
<td>High Risk More Symptoms</td>
<td>GOLD 3-4</td>
<td>≥ 2</td>
<td>≥ 10</td>
<td>≥ 2</td>
</tr>
</tbody>
</table>
### Management of COPD – the aims

<table>
<thead>
<tr>
<th>Reduce symptoms</th>
<th>Relieve symptoms</th>
<th>Improve exercise tolerance</th>
<th>Improve health status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce risk</td>
<td>Prevent disease progression</td>
<td>Prevent and treat exacerbations</td>
<td>Reduce mortality</td>
</tr>
</tbody>
</table>
Which factors classify patients as high risk (Group C and D)?

Three possibilities:

1. $\text{FEV}_1 < 50\%$ predicted
2. 2 or more exacerbations per year (or 1 hospitalisation in last year)
3. Both 1 and 2

Hence you will sometimes see sub-classifications of C1, C2, D2 etc.
When to use an ICS/LABA in COPD patients?

1. Does this patient have a history of frequent COPD exacerbations?

2. Does this patient with COPD behave like asthma or have a past history of asthma (possible overlap syndrome)?

3. Are there other clinical markers to identify frequent exacerbators?
When should ICS/LABA be prescribed in COPD?

When should ICS/LABA be prescribed in COPD?

- Consider when COPD patients are presenting with ≥2 major exacerbations per year (wet, wheezy and short of breath) or 1 or more hospitalisations for an exacerbation.

- ICS and LABA in appropriate patients improves lung function and quality of life and reduces exacerbations (ISOLDE\textsuperscript{1}, TORCH\textsuperscript{2} studies).

- Existing evidence does not indicate a treatment benefit for patients with mild COPD.

\textsuperscript{1}Burge PS et al. \textit{BMJ}. 2000; 320(7245): 1297–1303
\textsuperscript{2}Celli BR et al \textit{AJRCCM}. 2008; 178 (4): 332-8
When not to use an ICS/LABA in COPD patients

- Patients with a significant amount of inflammation that is not steroid responsive (in contrast to asthma)
- Non-exacerbators with moderate to severe COPD a LABA and LAMA should be considered*
- Patients with a past history of pneumonia

Diagnosis in general practice – is it asthma or COPD?

- Asthma and COPD are not always easy to differentiate

- Study results showed most patients can be classified by primary care physicians as having asthma or COPD based on clinical and spirometric findings, but there are difficulties in classifying up to 20% of patients with obstructive respiratory symptoms
A primary care prevalence estimate of ACOS in large cohort of primary care NZ patients

ACOS = Asthma COPD overlap syndrome

From Asthma and COPD in New Zealand. The experience of a large primary care cohort
Prevalence, pharmaceutical management and health services utilisation.
November 2014 – Asthma 12+ / COPD 40+. Personal communication from report for GSK NZ Ltd. CBG Research Ltd.
Asthma COPD overlap phenotype

### Proposed major and minor criteria for the identification of the overlap COPD asthma phenotype

<table>
<thead>
<tr>
<th><strong>Major criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Very positive bronchodilator test (increase in FEV₁ ≥15% and ≥400 mL over baseline)</td>
</tr>
<tr>
<td>Eosinophilia in sputum</td>
</tr>
<tr>
<td>Personal history of asthma (history before the age of 40)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Minor criteria</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>High total IgE</td>
</tr>
<tr>
<td>Personal history of atopy</td>
</tr>
<tr>
<td>Positive bronchodilator test (increase in FEV₁ ≥12% and ≥200 mL over baseline) on two or more occasions</td>
</tr>
</tbody>
</table>

Adapted from Soler—Cataluna JJ et al. *Arch Bronconeumol.* 2012;48:331-7
Stepwise approach to diagnosis and initial treatment – COPD or ACOS?

For an adult presenting with respiratory symptoms:

1. Does the patient have chronic airways disease?
2. Syndromic diagnosis of asthma, COPD and ACOS
3. Spirometry
4. Commence initial therapy
5. Referral for specialised investigations (if necessary)

STEP 1: DIAGNOSE CHRONIC AIRWAYS DISEASE
Do symptoms suggest chronic airways disease?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>Consider other diseases first</th>
</tr>
</thead>
</table>

**STEP 2: SYNDROMIC DIAGNOSIS IN ADULTS**

1. Asthma
   - Does the patient have a history of asthma?
   - Are symptoms worse at night or in the early morning?
   - Do symptoms occur in response to exercise?
   - Are there symptoms on waking?
   - Do symptoms resolve with bronchodilators?
   - Do symptoms persist despite treatment?

2. COPD
   - Are symptoms present all day?
   - Are symptoms worse during exercise?
   - Do symptoms persist despite treatment?

**STEP 3: PERFORM SPIROMETRY**

- Marked reversible airflow limitation (≥200 mL) with or without bronchodilators
- COPD drops
- COPD drops

**STEP 4: INITIAL TREATMENT**

- Asthma days
  - No LABA + ICS
  - No LABA + LABA
  - LABA + ICS
  - LABA + ICS
  - LABA + ICS

- COPD days
  - No LABA + ICS
  - No LABA + ICS
  - LABA + ICS
  - LABA + ICS

**STEP 5: SPECIALISED INVESTIGATIONS OR REFER IF**

- Persistent symptoms and exacerbations despite treatment
- Diagnostic uncertainty (e.g., unexplained pulmonary hypertension, cardiovascular diseases and other causes of respiratory symptoms, unexplained symptoms, weight loss, night sweats, signs of bronchiectasis or other structural lung disease)
- New features of either asthma or COPD
- Complications present
- Reasons for referral for either diagnosis as outlined in the GINA and GOLD strategy reports.
Step 1: Does the patient have chronic airways disease?

STEP 1
DIAGNOSE CHRONIC AIRWAYS DISEASE
Do symptoms suggest chronic airways disease?

Yes

No

Consider other diseases first

STEP 2
SYNDROMIC DIAGNOSIS IN ADULTS

(i) Assemble the features for asthma and for COPD that best describe the patient.
(ii) Compare number of features in favour of each diagnosis and select a diagnosis

<table>
<thead>
<tr>
<th>Feature: if present suggests -</th>
<th>ASTHMA</th>
<th>COPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of onset</td>
<td>□ Before age 20 years</td>
<td>□ After age 40 years</td>
</tr>
<tr>
<td>Pattern of symptoms</td>
<td>□ Variation over minutes, hours or days</td>
<td>□ Persistent despite treatment</td>
</tr>
<tr>
<td></td>
<td>□ Worse during the night or early morning</td>
<td>□ Good and bad days but always daily symptoms and exertional dyspnea</td>
</tr>
<tr>
<td></td>
<td>□ Triggered by exercise, emotions including laughter, dust or exposure to allergens</td>
<td>□ Chronic cough &amp; sputum preceded onset of dyspnea, unrelated to triggers</td>
</tr>
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### STEP 2: SYNDROMIC DIAGNOSIS IN ADULTS

(i) Assemble the features for asthma and for COPD that best describe the patient.
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<td>Chronic cough &amp; sputum preceded onset of dyspnea, unrelated to triggers</td>
</tr>
<tr>
<td><strong>Lung function</strong></td>
<td>Record of variable airflow limitation (spirometry or peak flow)</td>
<td>Record of persistent airflow limitation (FEV₁/FVC &lt; 0.7 post-BD)</td>
</tr>
<tr>
<td><strong>Lung function between symptoms</strong></td>
<td>Normal</td>
<td>Abnormal</td>
</tr>
<tr>
<td><strong>Past history or family history</strong></td>
<td>Previous doctor diagnosis of asthma</td>
<td>Previous doctor diagnosis of COPD, chronic bronchitis or emphysema</td>
</tr>
<tr>
<td></td>
<td>Family history of asthma, and other allergic conditions (allergic rhinitis or eczema)</td>
<td>Heavy exposure to risk factor: tobacco smoke, biomass fuels</td>
</tr>
<tr>
<td><strong>Time course</strong></td>
<td>No worsening of symptoms over time. Variation in symptoms either seasonally, or from year to year</td>
<td>Symptoms slowly worsening over time (progressive course over years)</td>
</tr>
<tr>
<td></td>
<td>May improve spontaneously or have an immediate response to bronchodilators or to ICS over weeks</td>
<td>Rapid-acting bronchodilator treatment provides only limited relief</td>
</tr>
<tr>
<td><strong>Chest X-ray</strong></td>
<td>Normal</td>
<td>Severe hyperinflation</td>
</tr>
</tbody>
</table>

**NOTE:** These features best distinguish between asthma and COPD. Several positive features (3 or more) for either asthma or COPD suggest that diagnosis. If there are a similar number for both asthma and COPD, consider diagnosis of ACOS.

<table>
<thead>
<tr>
<th>DIAGNOSIS</th>
<th>Asthma</th>
<th>Some features of asthma</th>
<th>Features of both</th>
<th>Some features of COPD</th>
<th>COPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIDENCE IN DIAGNOSIS</td>
<td>Asthma</td>
<td>Possible asthma</td>
<td>Could be ACOS</td>
<td>Possibly COPD</td>
<td>COPD</td>
</tr>
</tbody>
</table>
Step 3

**Step 3: Perform Spirometry**

- Marked reversible airflow limitation (pre-post bronchodilator) or other proof of variable airflow limitation

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</tr>
</tbody>
</table>

**Step 4: Initial Treatment**

- Asthma drugs: No LABA monotherapy
- Asthma drugs: No LABA monotherapy
- ICS and consider LABA +/- LAMA
- COPD drugs
- COPD drugs

* Consult GINA and GOLD documents for recommended treatments.

**Step 5: Specialised**

- Persistent symptoms and/or exacerbations despite treatment.
- Diagnostic uncertainty (e.g., suspected pulmonary hypertension, cardiovascular diseases and other causes of respiratory symptoms).
- Suspected asthma or COPD with atypical or additional symptoms or signs (e.g., haemoptysis...
## Step 4

### Step 3
**Perform Spirometry**
Marked reversible airflow limitation (pre-post bronchodilator) or other proof of variable airflow limitation.

### Step 4
**Initial Treatment**
- Asthma drugs No LABA monotherapy
- Asthma drugs No LABA monotherapy
- ICS and consider LABA +/- LAMA
- COPD drugs
- COPD drugs

*Consult GINA and GOLD documents for recommended treatments.*

### Step 5
**Specialised Investigations or Refer If:**
- Persistent symptoms and/or exacerbations despite treatment.
- Diagnostic uncertainty (e.g. suspected pulmonary hypertension, cardiovascular diseases and other causes of respiratory symptoms).
- Suspected asthma or COPD with atypical or additional symptoms or signs (e.g. haemoptysis, weight loss, night sweats, fever, signs of bronchiectasis or other structural lung disease).
- Few features of either asthma or COPD.
- Comorbidities present.
- Reasons for referral for either diagnosis as outlined in the GINA and GOLD strategy reports.
**Step 5**

**STEP 5 SPECIALISED INVESTIGATIONS or REFER IF:**

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*Consult GINA and GOLD documents for recommended treatments.*
How are we doing in primary care management of COPD?

GOLD category and treatment level by CAT

Number of patients

GOLD category

A  B  C  D

Other regime
Over treated
Well treated
Undertreated

Shaun Holt, Davitt Sheahan, Colin Helm, Chris Tofield, Andrew Corin, Janwillen WH Kocks
Primary Care Respiratory Medicine. 2014; 24:14025
What is the current status in primary care management of COPD?

“More than 50% of patients included in this audit were prescribed medications that were not consistent with any first or second choice pharmacologic therapy listed in the GOLD guideline. A key finding was that 20% of patients were undertreated. In particular, when using the CAT, a large proportion in group B were undertreated, implying that a substantial proportion of patients with high levels of symptoms were not prescribed long-acting bronchodilators. In contrast, 68% of CAT-classified GOLD C patients received inhaled corticosteroids alone, which is not recommended for GOLD C patients.”

Taken from: Shaun Holt, Davitt Sheahan, Colin Helm, Chris Tofield, Andrew Corin, Janwillen WH Kocks. Primary Care Respiratory Medicine 2014; 24, 14025
### Summary of new recommendations

<table>
<thead>
<tr>
<th>Disease Severity</th>
<th>Phenotypic features</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Mild (early)</td>
<td>Low Sx score - mMRC 0-1, CAT&lt;10 and</td>
<td>SABA or SAMA (prn)</td>
</tr>
<tr>
<td></td>
<td>Fair Spirometry - FEV₁, GOLD 1-2, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low exacerbation rate - 0-1/yr</td>
<td></td>
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<tr>
<td>B. Moderate – symptomatic</td>
<td>High Sx score - mMRC 2+, CAT≥10 and</td>
<td>LABA or LAMA</td>
</tr>
<tr>
<td>“Weak and Wheezy”</td>
<td>Fair Spirometry - FEV₁, GOLD 1-2, or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low exacerbation rate - 0-1/yr</td>
<td></td>
</tr>
<tr>
<td>C. Moderate – exacerbator</td>
<td>Low Sx score - mMRC 0-1, CAT&lt;10 and</td>
<td>ICS/LABA or LAMA</td>
</tr>
<tr>
<td>“Wet and Wheezy”</td>
<td>Poor Spirometry - FEV₁, GOLD 3-4, or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High exacerbation rate - 2+/yr</td>
<td></td>
</tr>
<tr>
<td>D. Severe (advanced)</td>
<td>High Sx score - mMRC 2+, CAT≥10 and</td>
<td>ICS/LABA and LAMA</td>
</tr>
<tr>
<td>“Wet, Weak and Wheezy”</td>
<td>Poor Spirometry - FEV₁, GOLD 3-4, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High exacerbation rate - 2+/yr</td>
<td></td>
</tr>
</tbody>
</table>

**Exacerbation** = symptoms of increased cough, SOB ± sputum that required a course of ABs ± prednisone

**Spirometry** $\text{FEV}_1/\text{FVC}<70\%$ with $\text{FEV}_1 \geq 50\%$ predicted (GOLD1-2) or $\text{FEV}_1<50\%$ predicted (GOLD3-4)
Inhaled COPD medication currently available in NZ
Proper use of the inhaler is critical

- Choose an inhaler that is going to be easy for the patient to use
- Make sure the patient knows how to use it
- Carry out repeated long term review to maintain patients’ proper use of inhalers
Conclusion: Consider the overall management

- Confirm diagnosis using spirometry
- Use structured questionnaires – CAT, CCQ or mMRC
- Determine if patient fits into GOLD ABCD on the basis of spirometric severity, exacerbation risk and symptom profile; consider your best chronic management
- Review all exacerbations in your COPD patients for initiation of ICS/LABA as appropriate
Conclusion: Consider the overall management

• Smoke and aero-pollutant avoidance (workplace, travel considerations)

• Vaccination (annual flu, 5 yearly pneumococcal)

• Exercise

• Don’t underuse LABAs and scrutinise use (funded or otherwise of LAMAs)

• Use your RNs/local Asthma Foundation/Society to continually review medication adherence
Sponsored by GlaxoSmithKline NZ
Private Bag 106600, Downtown Auckland 1143 NZ
Contact us on: www.gsk.co.nz or Ph: 0800 808 500