Optimising COPD management

- a resource pack for primary care
The impact of COPD in England –
why do we need to act to improve outcomes?

- COPD causes around 23,000 deaths in England each year – that’s one person every 20 minutes.
- Three million people in England have COPD, but only just under a million have been diagnosed with the disease.
- 10% of people with COPD are only diagnosed when they present to hospital as an emergency.
- The total annual cost of COPD to the NHS is over £800 million.
- It costs the NHS nearly ten times more to treat severe COPD than mild disease.
- The rate of lung function decline is faster in the earlier stages of the disease which can be modified by treatment.
- COPD is the second most common cause of emergency admission to hospital. Some areas in England see four times as many emergency admissions due to COPD than other areas.
- Around a third of those admitted to hospital as a result of their COPD are readmitted within a month of discharge. Readmission rates vary by up to five times in different parts of the country.
- The annual cost of lost productivity to employers and the economy because of COPD has been put at £3.8 billion. Some 25% of people with COPD are prevented from working due to the disease.
- If the whole NHS were to deliver services in line with the best around 7,500 lives could be saved each year.
QOF 2012 / 13 indicators for COPD

- COPD14 The practice can produce a register of patients with COPD - 3 points
- COPD15 The percentage of all patients with COPD diagnosed after 1 April 2011 in whom the diagnosis has been confirmed by post-bronchodilator spirometry – 5 points
- COPD10 The percentage of patients with COPD with a record of FEV1 in the previous 15 months – 7 points
- COPD13 The percentage of patients with COPD who have had a review, undertaken by a healthcare professional, including an assessment of breathlessness using the MRC dyspnoea score in the preceding 15 months - 9 points
- COPD8 The percentage of patients with COPD who have had influenza immunisation in the preceding 1 September to 31 March – 6 points

Total points = 30

Possible QOF 2013 / 14 indicators for COPD

At the time of writing, the QOF indicators for 13_14 have not yet been finalized but are likely to be:

NM47 - The percentage of patients with COPD and Medical Research Council (MRC) Dyspnoea Scale ≥3 at any time in the preceding 15 months, with a subsequent record of an offer of referral to a pulmonary rehabilitation programme 40-90% - 5 points

NM63 - The percentage of patients with COPD and Medical Research Council (MRC) Dyspnoea Scale ≥3 at any time in the preceding 15 months, with a record of oxygen saturation value within the preceding 15 months 40-90% - 5 points

NICE Quality Standards for COPD

The full Quality Standards can be found at:

http://guidance.nice.org.uk/QS10
East and North Herts CCG Commissioning Framework for 2013/14

This Framework contains a number of components that pertain to COPD:

1. All patients newly diagnosed with COPD, and existing patients on the practice COPD register with a MRC dyspnoea score 1 or 2 will be provided with the British Lung Foundation (BLF) COPD self-management pack.

   A READ code will be added to the clinical notes to indicate **self-management** initiated.

   The BLF self-management pack will be provided by the CCG. BLF training to support pack implementation will be provided at a locality level.

2. A minimum of 40% of patients with a MRC dyspnoea score 1 or 2 who have been provided with British Lung Foundation COPD self-management information will have a completed Personal Health Plan.

   A READ code will be added to the clinical notes to indicate **Personal Health Planning**.

3. Patients diagnosed with a Long Term Condition, including COPD, will be **screened for anxiety/depression** and, where indicated, patients will be referred to the Enhanced Primary Care Mental Health / IAPT Long Term Condition services.

   A READ code will be added to the clinical notes to indicate screening and referral as appropriate initiated.

4. An additional requirement of the Commissioning Framework is the proactive management of patients with LTCs using CareTrak predictive risk stratification and/or identification via MedeAnalytics of patients who are current high users of secondary care.

   The practice may choose to review, on a monthly basis, their MedeAnalytics list of patients who have been admitted with an acute exacerbation of COPD within the preceding 30 days. The practice may then choose to case review the care received by the patient prior to admission against the Quality Standards for care (See Appendix A and also P20 – NICE Quality Statement 12)
NICE Quality Statement 1 -diagnosis

People with COPD have one or more indicative symptoms recorded, and have the diagnosis confirmed by post-bronchodilator spirometry carried out on calibrated equipment by healthcare professionals competent in its performance and interpretation.

Increasing practice prevalence
If your practice prevalence is low, how can you increase your pick-up of patients with indicative symptoms (exertional breathlessness, chronic cough, regular sputum production, frequent winter ‘bronchitis’)?
- consider asking all smokers these questions when collecting QOF smoking status data
- consider asking all smokers when giving flu jabs

Workforce issues
Are there any practice issues around PNs and/or HCAs?
- workforce stability?
- COPD awareness, spirometry and interpretation skills?

Resources
University of Hertfordshire run one day courses on spirometry [http://www.herts.ac.uk/gsa_courses/COPD--Spirometry.cfm](http://www.herts.ac.uk/gsa_courses/COPD--Spirometry.cfm)

Forthcoming University of Hertfordshire courses are on:
- 16th April 13 - Essential Skills for Performing Spirometry - half day course
- 19th April 13 – Interpretation of Spirometry – full day update course
- 26th April 13 – Improving Outcomes for People with COPD: the Essentials. This full day course will map the NHS Outcomes Framework and NICE Quality Standards for COPD (2011).

Many pharmaceutical companies will provide numerous and various resources to interested practices, including training and Specialist Respiratory nurses to do clinics alongside your staff, thus providing service delivery and educational up-skilling simultaneously.

Appendix B contains details of some of these resources, which a handful of E&N Herts practices have already used.

The business model for the pharma companies is that as more patients are accurately identified with COPD, a higher volume of medications will be prescribed – the choice of exactly which medication is prescribed remains with the clinician.

Clinicians should be influenced more by local prescribing guidelines (as produced by Herts Medicines Management Committee), than by brand
association to a particular drug company that has provided educational support.

Quality Statement 2 – management planning

*People with COPD have a current individualized comprehensive management plan, which includes high-quality information and educational material about the condition and its management, relevant to the stage of the disease.*

**Terminology of ‘planning’**

This can be confusing! At least three different concepts exist:

1. **Personal Health Plan**: identifies a goal that the patient wishes to work upon and details the patient’s own strategy and personal obstacles towards achieving it.
2. **Management Plan**: includes high quality and patient targeted health education and promotion.
3. **Self-management or Action Plan**: describes the self-management steps that the patient should take when experiencing an exacerbation of COPD, including taking their rescue pack of medications.

This Quality Statement refers to Management Plans as in part 2 above. Patients attending Pulmonary Rehabilitation will cover most or all of the topics listed below:

- Disease education (anatomy, physiology, pathology, pharmacology, oxygen therapy and vaccination)
- Dyspnea/symptom management including chest clearance technique
- Smoking cessation
- Energy conservation/pacing
- Nutritional advice
- Managing travel
- Benefits system and disabled parking badges
- Advance directives (living wills)
- Anxiety management
- Goal setting and rewards
- Relaxation
- Identifying and changing beliefs about exercise and health-related behaviours
- Loving relationships/sexuality
- Exacerbation management
- Home care support
- Managing surgery (non-thoracic)
- Benefits of physical exercise
- Support groups such as British Lung Foundation Breathe Easy groups

HCT can provide practices with a variety of leaflets covering some of these topics.

There are also many web-based resources covering these topics:

www.copdexchange.co.uk

www.papertopatient.co.uk


http://www.blf.org.uk/Page/COPD-Self-management-pack

NB http://www.copdexchange.co.uk/internal/multimedia.php plan to have a suite of online videos showing correct inhaler technique by mid 2013 – maybe useful to direct patients and clinicians towards this site?
Personal Health Planning for COPD

This is a requirement in the Commissioning Framework 2013/14 for ≥40% of patients with MRC Dyspnoea score 1 and 2.

The aim of the health planning conversation is to empower people with COPD to optimize their self-management.

You can explain this to patients in the following terms.

People with COPD have to live with and deal with their condition 365 days of the year but they may only see their GP or nurse or specialist a few times per year. While doctors and nurses have an essential role in monitoring your health and advising appropriate treatments, you are the expert in managing your condition day to day and can make the changes needed to get healthier.

These changes might be: to take your medications regularly, to lose weight, or to exercise a bit more. Only you know what obstacles there are in your life that stop you from making that change today.

Personal Health Planning is a way of helping you to identify what changes you might need to make and to devise Goals related to those changes. Together with your GP or Nurse you will set an Action Plan to achieve your goals.

Here’s an example:
GOAL: “I want to be more active”
ACTION PLAN: “I could start by walking to work for three days a week. But in winter, the weather is often bad, so I need to buy some rain gear. I’ll tell my family what I’m doing so they can remind me to walk to work.”

The process of Personal Health Planning is really nothing more than having a structured conversation with your GP or nurse about what you want to work on yourself to improve your wellbeing. The result of your planning conversation will be that you agree on, and take away a copy of, your Action Plan, so you can use it to remind yourself to make the changes that you feel most committed to’.

As part of the Commissioning Framework, practices will receive the British Lung Foundation’s Self-management Packs for COPD plus training on how to discuss these packs and the case for self-management with patients. The patient’s understanding of this information will form the basis of the health planning conversation. Sharing patient data about lung age or recent spirometry results may also help to inform the patient’s understanding of their condition, again providing a firmer basis upon which to goal set.

So through discussing the range of options for self-management, the patient might decide to commit to taking more exercise, or to attempt smoking cessation again, or want to have a rescue pack at home in case of further exacerbations.

This would constitute the patient’s GOAL within the PHP.
See P10 for a sample completed plan. See Appendix E for a template PHP

The professional skills needed to help patients identify their own goals and to act upon them are health coaching skills. These are generic rather than disease specific skills and many practices have already participated in the Diabetes Personal Health Planning training.

Further health coaching/ Personal Health Planning training will be on offer to clinicians during 2013/14.
Here is an example of a completed PHP for COPD

My Action Plan

<table>
<thead>
<tr>
<th>Goal:</th>
<th>I want to be sure to use my rescue pack if I start getting a chest infection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do I WANT to do:</td>
<td></td>
</tr>
<tr>
<td>Describe:</td>
<td>My nurse has taken me through how I can recognize that I am having an acute exacerbation of my COPD.</td>
</tr>
<tr>
<td>How</td>
<td></td>
</tr>
<tr>
<td>Where</td>
<td>I now have written information that tells me how and when to increase my inhaler and start my rescue pack of antibiotics and steroids. I also now have these medicines at home, in case I need to start them. I also know what to do if I don’t get better after 48 hours of starting these medicines.</td>
</tr>
<tr>
<td>What</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td>When</td>
<td></td>
</tr>
<tr>
<td>Obstacles:</td>
<td>I might still feel unsure whether to take the medications if I become ill.</td>
</tr>
<tr>
<td>What might stop me from achieving this goal?</td>
<td></td>
</tr>
<tr>
<td>How I will overcome these obstacles?</td>
<td>I will discuss this with my husband or carer, so they can help me if I become unwell. We will keep the information and medicines together in a drawer in the kitchen.</td>
</tr>
<tr>
<td>How motivated am I to do this?</td>
<td>7/10</td>
</tr>
<tr>
<td>On a scale of 1 – 10:</td>
<td></td>
</tr>
<tr>
<td>1 - not at all motivated</td>
<td></td>
</tr>
<tr>
<td>10 - absolutely motivated</td>
<td></td>
</tr>
<tr>
<td>How confident am I that I can do this?</td>
<td>7/10</td>
</tr>
<tr>
<td>On scale of 1 – 10</td>
<td></td>
</tr>
<tr>
<td>1 - not at all confident</td>
<td></td>
</tr>
<tr>
<td>10 - absolutely confident</td>
<td></td>
</tr>
<tr>
<td>Follow up</td>
<td>If I have to take the rescue pack, I will ring the practice and let my nurse/GP know and also to organise getting a replacement rescue pack.</td>
</tr>
</tbody>
</table>
NICE Quality Statement 4 – annual comprehensive assessment

People with COPD have a comprehensive clinical and psychosocial assessment, at least once a year or more frequently if indicated, which includes degree of breathlessness, frequency of exacerbations, validated measures of health status and prognosis, presence of hypoxaemia and comorbidities.

The Quality Standard review is much broader than that contained in COPD13, which states simply that the patient should have an annual ‘review including an assessment of breathlessness using the MRC dyspnoea score in the preceding 15 months’.

It would be resource intensive to undertake a Quality Standard review of every patient with COPD.

However for patients at high risk of exacerbation and admission, further targeted and specific management can be provided if the following assessments are made in the Quality Standard Review:

- BMI
- Degree of breathlessness – using MRC Score – see Annexe 2
- Read coding frequency and severity of exacerbations
- Patient subjective assessment of Health status – e.g. CAT score (COPD Assessment Tool – gives a subjective impact of COPD on the patient’s quality of life) – see Annexe 3. The CAT score is downloadable free of charge, with a users guide, from http://www.catestonline.org
- Psychological assessment for anxiety and depression – e.g. PHQ9 score
- Presence of hypoxaemia and possible need for O2
- Documentation of co-morbidities
- Need for pulmonary rehabilitation
- Need for referral to specialist respiratory services
- Need for referral to palliative care services
- Need for referral to Social Services
- Inhaler technique
- Smoking status and desire to quit
Resources
Templates for the comprehensive annual review are freely available online from various providers.

http://www.copdeducation.org.uk/
Under ‘COPD documents’ - COPD patient review

Patient review services are also offered by several pharma companies
  ❖ Allen and Hanbury (via their non-promotional division Respiratory Care Associates)
  ❖ Astra Zeneca

Action points
The practice should consider:
  • Identifying and Read Coding patients at ‘high risk of admission for COPD’.
  • Undertaking a Quality Standard review on these patients and Read Coding ‘Quality Standard COPD review done’.
NICE Quality Statement 6: Pulmonary Rehabilitation

People with COPD meeting appropriate criteria are offered an effective, timely and accessible multidisciplinary pulmonary rehabilitation programme.

Pulmonary rehabilitation should be offered to:

- all patients who consider themselves functionally disabled by COPD (usually MRC grade 3 and above).
- all patients who have been admitted due to COPD.
- Pulmonary rehabilitation is not suitable for those who are unable to walk, have unstable angina or who have had a recent myocardial infarction.

See Appendix C for MRC Dyspnoea Scale.

Why is pulmonary rehabilitation important for improving outcomes?

- Providing pulmonary rehabilitation after discharge from hospital can reduce readmissions within three months from a third to just 7% of patients. Pulmonary rehabilitation is the only intervention to date shown to impact readmission rates in this way.

- Pulmonary rehabilitation has also been shown to improve health-related quality of life in COPD patients after suffering an exacerbation (e.g. dyspnoea, fatigue, and patient control over the disease)

- It is substantially below the NICE threshold for cost effectiveness, at only £2,000-£8,000/QALY.

- It has also been shown to be cost-saving. One recent study showed an overall cost saving of £152 per patient per pulmonary rehabilitation programme.

Pulmonary Rehabilitation is a multi-disciplinary continuum of services directed to persons with pulmonary disease and their families. MDT members include a Specialist Physiotherapist, Pharmacist, Dietician, Respiratory Physician, Respiratory Nurse and Benefits advisor.

How does the service run?

Pulmonary Rehabilitation classes run twice weekly for six weeks. Each session consists of one hour of exercise and one hour of education.

Exercise training is the cornerstone of the program, with patients encouraged to participate in a home exercise program as well. Educational sessions aim to promote a greater understanding of COPD, and improved self-management.
Assessment prior to commencing a course is essential to obtain baseline data, such as using the 6 minute walk test, and to ensure the patient is motivated and committed to participating fully in the sessions.

The patient is assessed again after completion of the course and offered follow on classes as appropriate.

1:1 Respiratory Physiotherapy
Is available for patients:

- who would benefit from learning 'active cycle breathing' (to clear the chest of unwanted mucus)
- people who persistently hyperventilate or have other dysfunctional breathing
- for people that are not suitable for PR.

It is currently available at 7 locations:

- Cheshunt Community Hospital
- Hertford County Hospital
- North Herts Leisure Centre in Letchworth
- Nevells Road Health Centre
- QE2 hospital
- Danestrete Clinic
- Herts and Essex Hospital.

To request 1:1 chest physio, use the PR referral form and circle ‘individual treatment’ in the box that states ‘treatment required’.

If a patient needs domiciliary chest physio due to an acute exacerbation, this is provided by the Integrated Care Team.

Contacting the PR Team
Tel: 01707 365121
Email: g.austin@nhs.net

Further info, including referral templates available on HCT website
http://www.hertschs.nhs.uk/services/adult/Respiratory_Services/respiratory_services_professionals.aspx

Action point
The practice may consider Read Coding ‘PR offered’ and ‘PR completed’ to allow for audit of this Quality Standard.
NICE Quality Statement 7 – management of exacerbations

People who have had an exacerbation of COPD are provided with individualised written advice on early recognition of future exacerbations, management strategies (including appropriate provision of antibiotics and corticosteroids for self-treatment at home) and a named contact.

HCT uses a leaflet called ‘COPD Action Plan’ for managing acute exacerbations. It is given to patients to help them recognise and self-manage acute exacerbations, using their rescue pack of oral steroids and antibiotics – see Appendix 4.

Rescue packs
The Hertfordshire Medicines Management Committee Clinical Guidelines for treating acute exacerbations of COPD suggest rescue packs should include:

1st line AB: Amoxicillin 500mg tds for up to 7 days
2nd line AB: if penicillin allergic - doxycycline 200mg stat then 100mg od for up to 7 days
    if treatment failure – co-amoxiclav 625mg tds for up to 7 days

PLUS non-enteric coated prednisolone 30mg od for 5 to 10 days
(NB NICE recommends treating for 7 to 14 days).

NB The majority of exacerbations are viral or pollutant induced and the anti-inflammatory properties of steroids are important in suppressing the acute response.

Steroids do NOT significantly increase the severity of the infection. It is sensible to give concomitant antibiotics because even commensal bacteria often make use of the increase in secretions to invade the tissues and worsen the situation.

Hence the advice is to give both steroids and antibiotics for all acute exacerbations.

Action point
The practice may consider Read Coding ‘Rescue pack discussed and issued’ for audit of this Quality Standard.
NICE Quality Statement 8 – initial assessment for long term oxygen therapy

People with COPD potentially requiring long-term oxygen therapy are assessed in accordance with NICE guidance by a specialist oxygen service.

The E&N Herts Home Oxygen Assessment Review Service began in September 2011. It delivers a specialist service to support clinical and cost effective use of oxygen in the home for adults.

All patients will be reviewed every six months and fully assessed once a year by this specialist oxygen service (NICE Quality Statement 9).

Which patients might need oxygen?

identify patients with very severe airflow obstruction (FEV1 < 30% of predicted)

NB QOF for 13/14 may require practices to undertake pulse oximetry on all patients with MRC Dyspnoea score ≥3

perform pulse oximetry when clinically stable

O2 sats ≤ 92% on air

Refer to see Consultant
(Primary care should not generally initiate O2, other than in exceptional circumstances)

Assessment should also be considered in:
- Patients with severe airflow obstruction (FEV1 30-49% of predicted)
- Patients with polycythaemia, cyanosis, raised JVP or peripheral oedema.
Contacting the Service
Tel: 01462 427129 or Michelle Lam-Richardson (O2 Specialist Nurse) on 07775 410581.

Action point
When doing spirometry, the practice may consider:

• Read Coding ‘FEV1 <30% of predicted’
• Read Coding ‘FEV1 30 to 49% of predicted’
• Then search these Read Codes to identify patients who may benefit from assessment for O2.
NICE Quality Statement 12: review within 2 weeks of discharge

People admitted to hospital with an exacerbation of COPD are reviewed within 2 weeks of discharge.

The clinical review may be done by the Community Matron, PN or GP.

The review should include the following – please also see the Case Notes Review Template for patients who have been admitted with an acute exacerbation of COPD at Appendix Z:

- Refer for Pulmonary Rehab and smoking cessation services (if appropriate).
- Check flu and pneumococcal immunisations are up to date.
- Assess for depression and anxiety.
- Ensure the patient has a self-management plan for acute exacerbations (if appropriate).
- Ensure patient has an up-to-date Rescue pack at home in case of future exacerbation.
- Ask yourself if the patient may be in their last 6 to 12 months of life – see P15 and 16. If so, check with the Community Matron/District Nursing team if Advance Care Planning has begun and if the patient is on the practice’s Palliative Care Register.
- Check that Enablement services are in place (if appropriate) – Enablement services are provided by Adult Care Services free of charge for the first six weeks after discharge from hospital (thereafter it is means-tested). This package is usually organized by the hospital at discharge. If not, contact the Integrated Point of Access team to arrange an urgent Social Services assessment.
- Check the discharge summary for details of in-patient management, medication changes and follow-up plan.
- Ensure the patient is clear about how to use any new inhalers or medications.
NICE Quality Statement 13 – Palliative care

*People with advanced COPD, and their carers, are identified and offered palliative care that addresses physical, social and emotional needs.*

The **Gold Standards Framework for identifying patients in the last 6 to 12 months of life** suggest the following step-wise approach:

**Step 1**: Ask yourself the Surprise Question “Would I be surprised if this patient were to die in the next months, weeks or days?”

**Step 2**: Does this patient have general indicators of decline i.e. deterioration, increasing needs or choice for no further active care?

**Step 3**: Does this patient have 2 or more of the following COPD specific indicators suggesting the end of life is within 6 to 12 months?

- severe airflow obstruction (FEV1 <30% predicted)
- recurrent hospital admissions (at least 3 in the last 12 months due to COPD)
- fulfills criteria for long-term home oxygen therapy
- MRC grade 4/5 – shortness of breath after 100m on the level or confined to the house
- Signs and symptoms of right heart failure
- Combination of other factors i.e. anorexia, previous ITU admission/non-invasive ventilation resistant organisms
- More than 6 weeks of systemic steroids for COPD in the previous 6 months

If the patient is not already known to the Community Matron and District Nursing team, refer them onward. The Community Team will begin conversations about Advance Care Planning.
QOF Palliative Care

Typically, COPD patients should make up about 14% of the palliative care register.

If the patient fulfills the above criteria, then add them to your QOF Palliative Care Register and discuss at the next visit with the Palliative Care Nurse.

QOF Indicator PC3 requires practices to have ‘a complete register available of all patients in need of palliative care/support irrespective of age’.

QOF Indicator PC2 requires practices to have ‘regular (at least 3 monthly) multidisciplinary case review meetings where all patients on the palliative care register are discussed’.

Not all patients on the Palliative Care Register need to be referred to the Hospice – your Palliative Care nurse will advise you on management at the meeting.

Action points
Practices may consider:
- searching for patients on O2, then doing a brief case notes review to see if the patient fulfills at least 2 other indicative markers.
- If so, add the patient to the Palliative Care Register and discuss at the next meeting.
Appendix A

COPD admissions with acute exacerbation- Case Notes Review Template

Your practice may be identifying patients who have been admitted with acute exacerbation of COPD, using the MedeAnalytics report system.

In order to reduce the risk of readmission, the following parameters have been derived from the Quality Standards for COPD. Your practice may use this template to systematically review the care received by these patients in the months prior to their admission.

If the patient has not received the following interventions, consider implementing (where appropriate) at a proactive, post-discharge review consultation. Ideally this review would take place within 2/52 of the discharge from hospital.

Patient dob or NHS number:

________________________________________________________

1. Does this patient have a record of FEV1 in the previous 15 months? (QOF Indicator COPD10)
   - Yes/ no/ exception reported

2. Has this patient had a clinical review, including an assessment of breathlessness using the MRC dyspnea score, within the previous 15 months? (QOF Indicator COPD13)
   - Yes/ no/ exception reported

3. Has this patient had an influenza vaccination since 1/9/12? (QOF indicator COPD8)
   - Yes/ no/ exception reported

4. Has the patient been reviewed face to face within 2 weeks of the admission? (by GP, Community Matron, District Nurse or Respiratory OP team)
   - Yes/ no if yes, please circle which HCP did the review in the list above.

5. Was the patient on the caseload of the Community Matron or Community Nurses at the time of the admission?
   - Yes/ no /NA

6. Has the admission been Read-coded as ‘recent admission due to acute exacerbation of COPD’ or something similar?
   - Yes/ no
7. Did the patient have access to a rescue pack before being admitted with the acute exacerbation?
   Yes/ no

8. Did the patient use the rescue pack before being admitted with the acute exacerbation?
   Yes/ no

9. Has the patient been referred for Pulmonary Rehabilitation?
   Yes/ no

10. Has the patient received Pulmonary Rehabilitation?
    Yes/ no

11. Is the patient using long term O2?
    Yes/ no

12. Has the patient been reviewed by the Home Oxygen Assessment and Review Service within the last 6 months?
    Yes/ no

13. Do you think the patient may be in the last six to 12 months of life, due to COPD?
    Yes/ no/ don't know

14. Is the patient on your QOF palliative care Register?
    Yes/ no/

15. Does this patient smoke?
    Yes/ no

16. Has this patient had pulse oximetry performed within the last 12 months (when clinically stable for at least the preceding 6 weeks)?
    Yes/ no
Summary of pharmaceutical company educational upskilling offerings

Several pharmaceutical companies can provide non-promotional support to practices, with the aims of:

- reducing unexplained clinical variation
- pro-active identification of patients with COPD
- pro-active case management of patients at highest risk of admission

The business model for the pharma companies is that as more patients are accurately identified with COPD, a higher volume of medications will be prescribed – the choice of exactly which medication is prescribed remains with the clinician.

Clinicians should be influenced more by local prescribing guidelines (as produced by Herts Medicines Management Committee), than by brand association to a particular drug company that has provided educational support.

Boehringer–Ingelheim

- can provide Warwick Spirometry Certificate training to nurses
- Insights Into COPD – Nurse Training programme, 4 modules of 1.5 hours each or as a single COPD Day, including basic spirometry training. Refresher level resource. Could be intro for HCAs? Recently provided HCA training at ULV Target Day with excellent feedback from HCAs.
- [www.copdexchange.co.uk](http://www.copdexchange.co.uk) - online resource for CPD – free and convenient.
- Move On Up – excellent DVD teaching pts how to breathe properly.

Respiratory Care Associates – Allen and Hanbury/GSK

- 12/12 intervention to individual practices or to a cluster of up to 20 practices
- engagement interview with lead GP and PN – 1 hour
- baseline visit – to run POINTS software, create baseline report and formulate Practice Action Plan – 2 hours.

- Interventions offered throughout year include:
  1. Facilitated Patient Review Service – clinic run by GSK’s RSN with PN, to review targeted patients face to face, thus delivering improved care and upskilling in-house clinicians. Can do several clinics for up to 60 patients if needed. Allow 45 mins per patient: 30 mins to see pat and 15 for clinician to clinician learning.
  2. Patient Notes Review – virtual review clinics, facilitated by independent COPD specialist.
4. Educational input – workshops, consultant practice visit, on-line modules (Paper to Patient www.papertopatient.co.uk).
5. Audit offerings, inc software packages and templates.

- POINTS report is run again after each intervention, to see impact upon outcomes.
- POINTS report and final visit at end of programme at 12/12.
- No services for housebound patients.
- POINTS package already used by the following practices: The Maples, Much Hadham Health Centre, Bridge Cottage, High Street Surgery Cheshunt and Wormley Medical Centre.

- **POINTS package ensures that practices start recording acute exacerbations.** Formal Read coding of acute exacerbations would facilitate practices to systematically review patients within 2/52 of discharge.

- POINTS also ensures that practices do a **CAT score** (COPD Assessment Tool) with the patient. The CAT score is a validated, short and simple questionnaire for the patient to complete, which gives a score of the **subjective impact of COPD on the patient’s quality of life. This can help to guide the personal health planning and self-management approaches.**

**Astra Zeneca**

- Can audit and validate the practice COPD register, then identify and risk stratify patients with COPD.

- Can provide a nurse mentorship and respiratory education programme, including visits by a consultant respiratory physician

- Can provide practice nurse and outreach nurse education meetings.

- Can provide COPD qualified specialist nurses to provide a patient review service whilst upskilling frontline nursing staff, based on findings from their training needs analysis in a clinical setting.

- Use Lung Health software – this is loaded on to the practice computer and structures the COPD consultation, making recommendations for medications and reviews etc, that are to NICE rather than QOF standards of care. **AZ covers the licence fee for this software for 12/12, thereafter the practice must buy it.**

**Novartis**

- [http://www.copdeducation.org.uk/](http://www.copdeducation.org.uk/) - excellent resource for
  - educational material for patients
  - comprehensive annual review template
  - self management booklet for patients
  - self management document for patients
Appendix C

MRC Dyspnoea Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Degree of breathlessness related to activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not troubled by breathlessness except on strenuous exercise</td>
</tr>
<tr>
<td>2</td>
<td>Short of breath when hurrying or walking up a slight hill</td>
</tr>
<tr>
<td>3</td>
<td>Walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace</td>
</tr>
<tr>
<td>4</td>
<td>Stops for breath after walking about 100 metres or after a few minutes on level ground</td>
</tr>
<tr>
<td>5</td>
<td>Too breathless to leave the house, or breathless when dressing or undressing</td>
</tr>
</tbody>
</table>

Appendix D

COPD Assessment Test

Available to download with user guide from [http://www.catestonline.org/](http://www.catestonline.org/)

### How Is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

**Example:** I am very happy [X] 0 2 3 4 5 I am very sad

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

**Total Score**

COPD Assessment Test and the CAT logo is a trade mark of the GlaxoSmithKline group of companies.
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Last Updated: February 24, 2012
## Template
### Personal Health Plan
#### My Action Plan

<table>
<thead>
<tr>
<th>Goal:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What do I WANT to do:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Describe:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How</td>
<td></td>
</tr>
<tr>
<td>Where</td>
<td></td>
</tr>
<tr>
<td>What</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
</tr>
<tr>
<td>When</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obstacles:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What might stop me from achieving this goal?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How I will overcome these obstacles?</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>How motivated am I to do this?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>On a scale of 1 – 10:</td>
<td></td>
</tr>
<tr>
<td>1 - not at all motivated</td>
<td></td>
</tr>
<tr>
<td>10 - absolutely motivated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How confident am I that I can do this?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>On scale of 1 – 10</td>
<td></td>
</tr>
<tr>
<td>1 - not at all confident</td>
<td></td>
</tr>
<tr>
<td>10 - absolutely confident</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow up</th>
<th></th>
</tr>
</thead>
</table>
NHS Hertfordshire - Treatment for COPD without asthma

Diagnosis
- Ensure robust diagnosis on basis of signs & symptoms & supported by spirometry in non-acute phase.

Inhaled therapy
- Before prescribing:
  - Consider use of In-Chek dial to identify suitable inhaler device.
  - Discuss inhaler types & inhaler technique (use placebo but consider infection control issues).
  - Use compatible Spacer with MDI when possible & appropriate.
  - Ensures patient demonstrates correct technique, knows dose & importance of adherence.

Smoking cessation
- ALL patients should be encouraged to stop, and offered help to do so, at every opportunity & ALWAYS before therapy change.
- Refer patients direct to a local NHS smoking cessation service or to Hertfordshire’s Stop Smoking Service – 0800 368 3068 (http://www.smokefreehertfordshire.nhs.uk/)

Immunisation
- ALL patients should be encouraged to have annual influenza vaccination & pneumococcal polysaccharide vaccine (Pneumovax® II) should be considered.

Educate about COPD and Treatment Options (potential benefits and risks)
- Consider tailored self-management plan where appropriate.
- Identify treatment aims: symptoms/improve QOL, to prevent acute exacerbations/palliative care.
- Advise about support services from community pharmacists or how to use on-going & new therapy.

Pulmonary Rehabilitation
- Offer to all appropriate patients on optimal medication who consider themselves functionally disabled by COPD (usual MRC score ≥ 3).
- Offer to patients with current hospitalisation/hospital at home treatment for acute exacerbation 1 week before discharge to benefit from the programme.

Breathlessness and/or exercise limitation

1<sup>st</sup> line: Salmeterol MDI
2<sup>nd</sup> line: Salmeterol DPI (Easylite)
3<sup>rd</sup> line: Terbutaline DPI (Turbutane) as required – continue at all stages

1<sup>st</sup> line: Ipratropium MDI as required (must be stopped if loratopium added in at a later stage)


Exacerbations or persistent breathlessness

FEV₁ ≥ 50%

Tiotropium DPI (HandiHaler) stop Ipratropium
1<sup>st</sup> line: Formoterol DPI (Easylite)
2<sup>nd</sup> line: Forontorol MDI (Atros Modyl)

Tiotropium DPI (HandiHaler)

FEV₁ < 50%

OR if contraindicated, not tolerated, change of inhaler device needed or ineffective.

1<sup>st</sup> line: Budesonide Fomterol DPI (400/12 Turboplast; 1 puff bd)
2<sup>nd</sup> line: Fluticasone/ Salmeterol (50/5 Accuthal: 1 puff bd)

LAMA-LABA: ONLY consider in patients with severe disabling symptoms if ICS discord or not tolerated!


LAMA-LABA: ONLY consider in patients with severe disabling symptoms & more than 2 exacerbations in 12 months
LAM-LABA: ONLY consider in patients on LAMA with severe disabling symptoms if ICS discord or not tolerated.

Triple Therapy LAMA-LABA-ICS: ONLY consider in patients with severe disabling symptoms & more than 2 exacerbations in 12 months

MDI = pressurised Metered Dose Inhaler; DPI = Dry Powder Inhaler; S/IAMA = Short-Acting beta Agonist; S/IAMA = Short-Acting Muscarinic Antagonist; ICS = Inhaled Corticosteroid; " = off label; * = order based on cost; ** order based on steroid dose & cost
LABA + ICS MDIs: licensing and switching
- No LABA + ICS combination MDI is licensed for use in COPD.
- Patients currently prescribed Fluticasone 250mcg salmeterol 25mcg Inhaler (Seretide Evohaler) should be reviewed for a change to Fluticasone 500mcg salmeterol 50mcg DPI (Seretide Accuhaler). The Accuhaler is licensed for use in COPD and currently has a lower cost than the Evohaler.

Oral Therapy
- Carbocisteine
  - Consider trial of 750mg TDS for 4 weeks in patients with sticky sputum that is hard to cough up.
  - Continue ONLY if patient reports it is easier to clear their sputum.
  - If longer term treatment required reduce to 750mg BID.
- Theophylline
  - Consider trial in patients unable to use inhaled therapy.
  - Monitor plasma levels and for drug interactions. Caution use in older people.
  - Titrated and review after 4-6 weeks. Continue ONLY if symptomatic improvement.

Exacerbations and Self Management
- Increase as required bronchodilator (+ Spacer if MDI).
- Treat with prednisolone (NOT a/c) 30mg OD for 5-10 days, +/- 7.7 amoxycillin or doxycycline.
- Advise patients at risk of exacerbations to respond promptly to symptoms.
- Consider giving a standby course of prednisolone and antibiotics to keep at home along with a self management plan.
- Do not start long term oxygen treatments unless indicated at follow-up at 4-6 weeks.

Long Term Oxygen Therapy
For hypoxia, if SpO2 < 90%, breathing air relieves for assessment including arterial blood gases.

COPD Value Pyramid - What we know.... Costs/QALY

Cost comparison of inhaler devices and combinations (Drug tariff October 2012)

Short and Long Acting Bronchodilators

<table>
<thead>
<tr>
<th>Inhaler</th>
<th>Dose</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salbutamol/100mcg CFC free MDI</td>
<td>Two puffs qds</td>
<td>£22</td>
</tr>
<tr>
<td>Salbutamol Dry Powder Inhaler 100mcg (Evather)</td>
<td>Two puffs qds</td>
<td>£24</td>
</tr>
<tr>
<td>Ipratropium 25mcg MDI</td>
<td>Two puffs qds</td>
<td>£24</td>
</tr>
<tr>
<td>Turbutaline DPI 600mcg (Turbohaler)</td>
<td>One puff qds</td>
<td>£105</td>
</tr>
<tr>
<td>Formoterol 12mcg DPI (Evahaler)</td>
<td>12mcg - twice daily</td>
<td>£144</td>
</tr>
<tr>
<td>Formoterol 12mcg DPI (Atmos Modula)</td>
<td>12mcg - twice daily</td>
<td>£139</td>
</tr>
<tr>
<td>Formoterol 12mcg DPI (Oxis)</td>
<td>12mcg - twice daily</td>
<td>£900</td>
</tr>
<tr>
<td>Salmeterol 25mcg aerosol inhaler</td>
<td>Two puffs bd</td>
<td>£356</td>
</tr>
<tr>
<td>Salmeterol 60mcg DPI (Accuhaler)</td>
<td>One puff bd</td>
<td>£356</td>
</tr>
<tr>
<td>Turbutaline 10mcg DPI (Handi-Tec) refill</td>
<td>1mcg - 1 ad</td>
<td>£406</td>
</tr>
<tr>
<td>Turbutaline 2.5mcg Inhaler (Keoplama)</td>
<td>2.5mcg - 2 puffs od</td>
<td>£432</td>
</tr>
</tbody>
</table>

Combination Inhalar

<table>
<thead>
<tr>
<th>Inhaler</th>
<th>Dose</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budesonide 400mcg Formoterol 12mcg DPI (Symbocort Turbohaler)</td>
<td>One puff bd</td>
<td>£462</td>
</tr>
<tr>
<td>Fluticasone 500mcg salmeterol 50mcg DPI (Seretide Accuhaler)</td>
<td>One puff bd</td>
<td>£462</td>
</tr>
<tr>
<td>Budesonide extra fine particles 100mcg (Formoterol bron MDI (Foster))</td>
<td>Two puffs bd</td>
<td>£299</td>
</tr>
<tr>
<td>Turbutaline 200mcg salmeterol 25mcg Inhaler (Seretide Evohaler)</td>
<td>Two puffs bd</td>
<td>£294</td>
</tr>
</tbody>
</table>

Insufflator

<table>
<thead>
<tr>
<th>Insufflator</th>
<th>Combination</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiple Thrapy (LABA + ICS + LAMA)</td>
<td>£155 to £156</td>
<td></td>
</tr>
<tr>
<td>LABA + LAMA</td>
<td>£65 to £68</td>
<td></td>
</tr>
</tbody>
</table>

Approved by Herefordshire Medicines Management Committee November 2012
NHS Hertfordshire Treatment for COPD without asthma (for COPD without asthma follow asthma guidelines) – supporting information

London Respiratory Team – Responsible Respiratory Prescribing Presentation
- COPD Value Pyramid - What we know…. Cost/QALY (adapted version)

Diagnosis
- Ensure there is a robust diagnosis of COPD on the basis of signs & symptoms & supported by spirometry in non acute phase.
- The diagnosis should be queried in patients not responding to treatment.

Smoking cessation
- All patients still smoking, regardless of age, should be advised of the benefits of stopping smoking (benefits in terms of progressions of symptoms and survival) and encouraged to stop, and offered help to do so, at every opportunity including before a change in therapy.
- Patients should be referred direct to a local NHS smoking cessation service or Hertfordshire’s Stop Smoking Service - 0800 389 3998 http://www.smokefreehertfordshire.nhs.uk/ (patients may be offered NRT, varenicline or bupropion with an appropriate support programme).

Lifestyle Advice
- Initial advice and support should be given on:
  - nutrition and weight management
  - appropriate activity/exercise

Immunisation
- All patients should be encouraged to have annual influenza vaccination and pneumococcal polysaccharide vaccine (Pneumovax® II) should be considered.

Educate about COPD and Treatment Options
- Consider tailored self-management plan where appropriate.

All Therapy
- Discuss benefits and risks.
• Identify, discuss and agree clinically relevant treatment aims - symptoms/improve QOL/ to prevent acute exacerbations/palliative care. For symptom control the following should be considered:
  ⇒ Making breathing easier.
  ⇒ Doing some things that they can’t currently do, or doing the same things but faster.
  ⇒ Doing the same things as before but being less breathless when doing them.
  ⇒ Improving sleep.
• Set an appropriate review date.
• Advise about support services from community pharmacists on how to use on-going and new therapy (refer to community pharmacy section for further details).

Inhaled Therapy
Refer to separate document for treatment flowchart

Before Prescribing
• Refer to Appendix 1 for comparative costs of inhaler devices & combinations.
• Consider use of In-Check dial to identify suitable inhaler device.
• When prescribing any inhaled medication ensure that the patient has received patient centred education about the disease and medication. This should include inhaler types, inhaler technique and dose. Patients should be able to demonstrate satisfactory technique.
• Placebo versions of the recommended products and an appropriate Spacer should be available for demonstration purposes (consider infection control issues).
• The benefits/risk of treatment options and outcomes (symptom control, reduce exacerbations) should be discussed and agreed with the patient.
• Do not use oral corticosteroid reversibility tests to identify patients who will benefit from inhaled corticosteroids.
• Prescribers should be aware of the potential risk of developing side effects (including non-fatal pneumonia) in patients treated with inhaled corticosteroids and discuss this with patients before prescribing.

When reviewing and before a therapy change
• An assessment of inhaler device, inhaler technique and adherence should be made:
  o Inhaler device – the patient is able to use the inhaler device (DPI or MDI with spacer).
    Consider a change to an alternative device if needed.
  o Inhaler technique – the patient has learnt the correct inhaler technique and is able to demonstrate this. Inhaler technique should be checked and reinforced regularly.
    Consider a change to an alternative device if needed.
  o Prescribed regime – the patient is using their inhaled therapy regime as prescribed.
    Adherence should be checked regularly and any issues contributing to non-adherence identified and addressed where possible. Consider a change to an alternative device or therapy if needed.
• A review should be arranged after an appropriate time period and adequacy of symptom control (eg breathlessness, exercise tolerance, exacerbation frequency) and side-effects assessed:
  o For symptomatic improvement treatment should be reviewed after 1 month for bronchodilators and 2-3 months for ICS. Consider response to the following questions:
    ⇒ Has the treatment made a difference?
    ⇒ Is breathing easier?
Can they do some things now that they couldn’t do at all before, or do the same things but faster?

Can they do the same things as before but are now less breathless when doing them?

Has sleep improved?

- Treatment should be discontinued/changed if ineffective.

**Spacers**

- Compatible spacers should be used with MDIs when possible and appropriate (see Appendix 2 for Spacers costs and compatibility).
- Ensure patient has been taught how to use and can demonstrate use.
- Ensure patient is aware of cleaning and replacement requirements.

**LABA + ICS MDIs**

- No LABA+ICS combination MDI is licensed for use in COPD.
- Only consider use of MDI for LABA/ICS combination if patient unable to use a DPI.
- Patients currently prescribed Fluticasone 250mcg/ salmeterol 25mcg Inhaler (Seretide Evohaler) should be reviewed for a change to Fluticasone 500mcg/ salmeterol 50mcg DPI (Seretide Accuhaler). The Accuhaler is licensed for use in COPD and currently has a lower cost than the Evohaler.

**Triple Therapy (LAMA + LABA + ICS)**

- The clinical and cost effectiveness of treatment with a long-acting muscarinic antagonist (LAMA) in addition to a long-acting beta2 agonist (LABA) with an inhaled corticosteroid (ICS) in a combination inhaler in patients with COPD is uncertain.
- Triple therapy should be considered for exceptional use for patients:
  - with severe disease (FEV₁ < 50%) with severe disabling symptoms and more than 2 exacerbations in 12 months despite optimal treatment with other therapies AND
  - who have annual influenza immunisations and have been immunised (or considered for immunisation) against pneumococcal disease, AND
  - who have stopped smoking (or attempts have been made to stop) AND
  - who have undertaken pulmonary rehabilitation (where appropriate and available)
- A review should be arranged after an appropriate time period and one of the treatments stopped if there is no clinical benefit.

**LABA + ICS FEV₁ ≥ 50%**

- Not recommended for routine use in patients with FEV₁ ≥ 50% as NICE Guidelines state that compared to LABA alone it is not cost effective to give to everyone compared to giving only to people with FEV₁ <50%.
  - Only consider use in patients on LABA with severe disabling symptoms & more than 2 exacerbations in 12 months

**LABA + LAMA**

- Not recommended for routine use as the clinical and cost effectiveness of this combination compared to LABA, LAMA or LABA + ICS is uncertain.
  - only consider trial in patients with FEV₁ ≥ 50% with severe disabling symptoms if ICS declined or not tolerated
  - only consider trial in patients with FEV₁ <50% on LABA alone with severe disabling symptoms if ICS declined or not tolerated.

**LAMA + ICS**

Approved by Hertfordshire Medicines Management Committee November 2012
Not recommended as NICE found no quality randomised controlled trial evidence.

**Tiotropium - safety studies of Spiriva Respimat**
- Due to ongoing safety concerns with Spiriva Respimat (refer to MHRA advice [http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON099869](http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON099869)) and higher costs compared to the HandiHaler, this device is not routinely recommended (only consider in patients when tiotropium is indicated but the patient is unable to use the HandiHaler device. Ongoing safety concerns should be discussed with the patient).

**Pulmonary Rehabilitation**
- Offer to all appropriate patients on optimal medication who consider themselves functionally disabled by COPD (usually MRC grade 3 and above).
- Offer to patients with recent hospitalisation/hospital at home treatment for acute exacerbation if well enough to benefit from the programme.

**Oral Therapy**

**Carbocisteine**
- Consider a trial of carbocisteine 750mg TDS in patients with a chronic cough productive of sputum.
- Assess for response and side-effects after 4 weeks.
- Continue ONLY if there is symptomatic improvement (reduction in frequency of cough and sputum production).
- If beneficial continue at higher dose for duration of troublesome period (e.g. 4-8 weeks). If longer term treatment required reduce to maintenance dose of 750mg BD.
- Do NOT routinely use to prevent exacerbations.

**Theophylline slow release**
- Consider trial in patients who are unable to use inhaled therapy.
- There is a need to monitor plasma levels and for interactions.
- Use is cautioned in older people.
- Titrate and assess for benefit and side-effects after 4-8 weeks.
- Continue ONLY if there is symptomatic improvement.

**Oral corticosteroids**
- Maintenance use in COPD is not normally recommended.

**Exacerbations**
- Assess for management in the appropriate setting.
- Increase as required bronchodilator therapy to control symptoms (use MDIs with spacer).
- Give a short course of prednisolone 30mg daily for 5-10 days (prescribe as standard tablets, do NOT prescribe e/c) if significant increased breathlessness interferes with activities of daily living.
  - Acute exacerbation of COPD (for up to 7 days):
    - Amoxicillin 500mg TDS or
    - If allergic to penicillin - Doxycycline 200mg stat then 100mg OD or
For treatment failure - Co-amoxiclav 625mg TDS

- Patients at risk of having an exacerbation should be given self-management advice that encourages them to respond promptly to symptoms.
- Consider giving a standby course of corticosteroid tablets and antibiotics to keep at home and monitor use.
- Do not start long term treatments unless indicated at follow-up at 4-6 weeks.

Specialist Referral
Reasons for specialist referral include:
- Diagnostic uncertainty
- Suspected severe COPD
- Rapid decline in FEV₁
- Repeat exacerbations despite optimal therapy
- Assessment for oxygen therapy, long-term nebuliser therapy or maintenance oral corticosteroid therapy

Community Pharmacy (New Medicines Service (NMS) and Medicines Use Reviews (MUR))
- Patients commenced on new inhaled therapy or theophylline should be referred to a community pharmacy offering the NMS and targeted MURs.
- Patients starting a new inhaled therapy or theophylline whilst at hospital (inpatient or outpatient) must be referred into the NMS by a healthcare professional in the hospital team who recommended/prescribed the medicine.
- Patients recently discharged from hospital who had changes made to their medicines while in hospital can be referred for a targeted MUR within 4 weeks of discharge.

References
- NPC COPD trainer presentation 2010 draft 1
- NPC COPD - Less than 60 minute e-learning events http://www.npc.nhs.uk/therapeutics/respiratory/copd/less_than_sixty.php
- NPCi blog (Nov 2009) Triple versus single therapy in COPD http://www.npci.org.uk/blog/?p=738
- East of England Prescriber Respiratory workstream documents
- Scottish Medicines Consortium - Fostair® Advice; 2008 http://www.scottishmedicines.org.uk/SMC_Advice/Advice/373_07_beclometasone_100mcg_formoterol_6mcg_metered_dose_inhaler_Fostair_beclometasone_100mcg_formoterol_6mcg_metered_dose_inhaler_Fostair
- Clinical Knowledge Summaries Chronic obstructive pulmonary disease guidelines, Last revised in Nov 2010 http://www.cks.nhs.uk/chronic_obstructive_pulmonary_disease
- Derbyshire Joint Area Prescribing Committee Guideline on COPD Management; Dec 2011.
Appendix 1
– cost comparison of inhaler devices and combinations

(Drug tariff October 2012)

### Short acting bronchodilators

<table>
<thead>
<tr>
<th>Inhaler</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salbutamol 100mcg CFC free MDI</td>
<td>£22</td>
</tr>
<tr>
<td>Salbutamol 100mcg inhaler (Salbutin Novolizer) - refill</td>
<td>£40</td>
</tr>
<tr>
<td>Salbutamol Dry Powder Inhaler 100mcg (Easyhaler)</td>
<td>£48</td>
</tr>
<tr>
<td>Salbutamol Dry Powder Inhaler 200mcg (Easyhaler)</td>
<td>£48</td>
</tr>
<tr>
<td>Ipratropium 20mcg MDI</td>
<td>£74</td>
</tr>
<tr>
<td>Salbutamol DPI 200mcg (Pulvinal)</td>
<td>£71</td>
</tr>
<tr>
<td>Salbutamol Dry Powder Inhaler 200mcg (Accuhaler)</td>
<td>£73</td>
</tr>
<tr>
<td>Salbutamol Breath actuated 200mcg (Aromir autohaler)</td>
<td>£38</td>
</tr>
<tr>
<td>Salbutamol 100mcg easibreathe (Salamol)</td>
<td>£92</td>
</tr>
<tr>
<td>Turbutaline DPI 500mcg (Turbohaler)</td>
<td>£101</td>
</tr>
</tbody>
</table>

### Long acting bronchodilators

<table>
<thead>
<tr>
<th>Inhaler</th>
<th>dose</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formoterol 12mcg DPI (Easyhaler)</td>
<td>12mcg - twice daily</td>
<td>£144</td>
</tr>
<tr>
<td>Formoterol 12mcg MDI (Atimos Modultil)</td>
<td>12mcg - twice daily</td>
<td>£219</td>
</tr>
<tr>
<td>Formoterol 12mcg DPI (Foradil)</td>
<td>12mcg - twice daily</td>
<td>£284</td>
</tr>
<tr>
<td>Formoterol 12mcg Turbohaler (Oxis)</td>
<td>12mcg - twice daily</td>
<td>£302</td>
</tr>
<tr>
<td>Salmeterol 25mcg aerosol inhaler</td>
<td>Two puffs bd</td>
<td>£356</td>
</tr>
<tr>
<td>Salmeterol 50mcg DPI (Accuhaler)</td>
<td>One puff bd</td>
<td>£356</td>
</tr>
<tr>
<td>Tiotropium 18mcg DPI (HandiHaler) refill</td>
<td>18mcg - 1 od</td>
<td>£408</td>
</tr>
<tr>
<td>Salmeterol 50mcg diskhaler refill (Serevent)</td>
<td>One puff bd</td>
<td>£428</td>
</tr>
<tr>
<td>Tiotropium 2.5mcg Inhaler (Resiplat)</td>
<td>2.5mcg - 2puffs once daily</td>
<td>£432</td>
</tr>
</tbody>
</table>

### Combination Inhalers

<table>
<thead>
<tr>
<th>Inhaler</th>
<th>dose</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budesonide 200mcg/ Formoterol 6mcg DPI (Symbicort Turbohaler)</td>
<td>Two puffs bd</td>
<td>£462</td>
</tr>
<tr>
<td>Budesonide 400mcg/ Formoterol 12mcg DPI (Symbicort Turbohaler)</td>
<td>One puff bd</td>
<td>£462</td>
</tr>
<tr>
<td>Fluticasone 500mcg/ salmeterol 50mcg DPI (Serevide Accuhaler)</td>
<td>One puff bd</td>
<td>£498</td>
</tr>
<tr>
<td>Beclomethasone extra fine particles 100mcg /Formoterol 6mcg MDI (Forstair)*</td>
<td>Two puffs bd</td>
<td>£357</td>
</tr>
<tr>
<td>Fluticasone 250mcg/ salmeterol 25mcg inhaler (Serevite Evahaler)</td>
<td>Two puffs bd</td>
<td>£724</td>
</tr>
</tbody>
</table>

*unlicensed

### Inhaler Combinations

<table>
<thead>
<tr>
<th>Combination</th>
<th>Annual cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triple Therapy (LABA+ICS+LAMA)</td>
<td>£765 to £1,156</td>
</tr>
<tr>
<td>LABA + LAMA</td>
<td>£552 to £788</td>
</tr>
</tbody>
</table>

Approved by Hertfordshire Medicines Management Committee November 2012
### Appendix 2
- **Spacer costs and compatibility**
  (BNF, MIMS and Drug tariff: October 2012)

<table>
<thead>
<tr>
<th>Spacer Name</th>
<th>Volume</th>
<th>Cost</th>
<th>Compatible MDI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerochamber Plus (with mouthpiece)</td>
<td>149ml</td>
<td>£4.69</td>
<td>All</td>
</tr>
<tr>
<td>Volumatic</td>
<td>750ml</td>
<td>£2.91</td>
<td>A &amp; H Inhalers- Flixotide, Serevent, Seretide, Ventolin (may not be compatible with other MDIs)</td>
</tr>
<tr>
<td>Able spacer (with mouthpiece)</td>
<td>135ml</td>
<td>£4.20</td>
<td>All</td>
</tr>
<tr>
<td>Optichamber Diamond (with mouthpiece)</td>
<td>140ml</td>
<td>£4.49</td>
<td>All</td>
</tr>
<tr>
<td>Pocket chamber (with mouthpiece)</td>
<td>110ml</td>
<td>£4.18</td>
<td>All</td>
</tr>
<tr>
<td>Vortex (with mouthpiece)</td>
<td>194ml</td>
<td>£6.07</td>
<td>All</td>
</tr>
</tbody>
</table>