

Why should primary care trusts, practices, and GPs prioritise provision of care for patients with COPD?



Early diagnosis and treatment, evidence-based care, and hospital-at-home services can improve outcomes in chronic obstructive pulmonary disease, says Dr Basil Penney

Chronic obstructive pulmonary disease (COPD) is a preventable and treatable disease characterised by airflow limitation. It is usually progressive and is associated with damage from chronic inflammation primarily caused by cigarette smoking.¹ It is a long-term condition with a long asymptomatic phase, and although COPD affects the lungs, it also produces significant systemic effects.

Prevalence

The estimated prevalence of COPD is complicated by the level of underdiagnosis, but quality and outcomes framework (QOF) data indicate a UK prevalence of 1.5% (almost 800,000).² However, one study estimated that there are 3 million people with COPD in the UK.³

Prevalence increases with age, and rates appear to be increasing in women but have reached a plateau in men.⁴ Significant regional variations occur, with populations living in inner cities, and areas of former heavy industry, including mining, those most affected. Many of these areas have high levels of deprivation and unemployment.⁵

Costs of care

This largely hidden disease places a heavy burden on healthcare utilisation and costs (see Box 1, p.53). The detrimental effect on quality of life (QoL) in physical, social, and emotional terms often goes unnoticed by healthcare professionals,⁸ and well documented co-morbidities (e.g. cardiovascular disease and osteoporosis)¹⁰ are often not addressed.

Innovations to improve care

Healthcare policy has raised the profile of long-term conditions and emphasis is now placed on providing care closer to home. There is also greater recognition that healthcare needs to target those most in need.

Reports from the Healthcare Commission,⁷ the Chief Medical Officer,⁸ the National Chronic Obstructive Pulmonary Disease Audit 2008,¹¹ and patient groups¹² have highlighted the shortfall in care for people with COPD. This has led to the development of a National Strategy on COPD, scheduled for release soon. This will aim to improve the quality of and access to COPD services, reduce health inequalities, and improve healthcare utilisation costs.¹³

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What can/should be done at primary care trust, GP, and public health level?

It is against this background that COPD care has become a challenge for every locality at the forefront of the long-term condition agenda. While reduction of emergency admissions and length of hospital stay are key drivers, the focus should remain patient centred and consider management of patients with COPD from diagnosis to death.

Primary care trusts

Leadership and coordination are essential at PCT level and planning for COPD care should ideally be developed by a local network (strategy and planning group). Composition of this network should include:

- primary and secondary care clinicians
- patient/carer representation as highlighted by the NHS world class commissioning programme
- representatives from groups advising on public health, smoking cessation, commissioning, and social care, and from other parties with relevant expertise and local knowledge¹⁴
- dedicated management input, including those who can work across traditional boundaries—relationships are crucial and can contribute valuable social capital.¹⁵

The network should assess local need and identify gaps in current care in order to develop a vision for local COPD services. Accurate and up-to-date information is required to establish local need; for example:

- local QOF data
- smoking rates
- socioeconomic data
- hospital episodes statistics.

Comparability is sometimes more important than accuracy. Useful information can be found at www.connectingforhealth.nhs.uk/systemsandservices/sus/delivery/comparators, which can help compare local performance with similar areas around the country.

The local network should be familiar with evidence-based guidance and local and NHS priorities, and it will set and monitor standards of care around measurable outcomes. A clear understanding of clinical pathways enables resources

Box 1: The burden of COPD

- COPD is the fifth biggest killer disease in the UK—24,816 deaths in 2008⁶—claiming more lives than breast, bowel, or prostate cancer⁵
- It is the second commonest cause of emergency admission to hospital and one of the most costly inpatient conditions treated by the NHS⁷
- COPD is responsible for more than 1 million bed days in the UK annually⁸
- On average, 15% of patients with COPD die within 3 months of hospital admission,⁸ and 31% are re-admitted with an exacerbation within 3 months of hospital admission⁹
- Direct costs of providing COPD care in the NHS are more than £800 million per year,⁸ more than half of which relates to hospital care
- The condition is responsible for 1.4 million GP consultations per year⁸
- COPD causes 24 million lost working days each year⁸

to be used to best advantage by improving and integrating respiratory services across traditional boundaries (primary–secondary care; health–social care).

The NHS Institute Opportunity Locator tool (www.institute.nhs.uk/opportunitylocator) provides a way of analysing the shift potential to be gained from moving care closer to the community. The aim should be to deliver high-quality care that is evidence based, safe, and offers a good patient experience. It is not just a means of doing things more cheaply.

Acute trusts and provider primary care organisations will be expected to deliver an annual quality report based on quality markers drawn up by the National Institute for Health and Clinical Excellence (NICE). It is anticipated that markers for COPD will be included in this.

General practice

General practice will require leadership, sustained education, and workforce development. Concerns about workload and lack of accessible information are barriers.

Box 2: Smoking—the main cause of COPD

- 22% of the population over the age of 16 smoke¹⁶
- 67% of smokers want to give up¹⁶
- 83% of people who want to give up mention at least one health reason¹⁶
- Smoking is highest among households classified as having routine or manual occupations (30%)¹⁶
- Smoking is highest in the 20–24 years age group¹⁷
- 6% of pupils aged 11–15 years smoke regularly¹⁸

The General Practice Airways Group (GPIAG) provides a wide range of resources to support primary care health professionals (available from www.gpiag.org). It is developing a programme to highlight awareness and understanding of the upcoming National Strategy on COPD, and to help primary care health professionals to implement it in practice.

It is more likely that GPs will engage with tackling COPD if it is covered by the QOF, added to contract (enhanced) services, and driven by PCTs, with objectives against which they are appraised. Key standards¹⁴ address issues of workforce competency and performance.

Public health

Raising awareness of lung health and COPD is a key public health issue as it is a largely preventable disease, with 85% of men and 84% of woman who die from the disease having developed it through smoking. In spite of this, 85% of smokers have never heard of COPD.⁵

Public health initiatives are required to promote lung health. Smoking cessation services should target vulnerable groups (see Box 2) and areas where smoking prevalence is high.

Accurate early diagnosis in primary care

Underrepresentation of patients with symptoms of COPD is well recognised. Patients are more likely to consult their GP once their QoL is affected, or when they experience acute variability in lung function.¹⁹

Screening

Screening offers the potential for earlier diagnosis of COPD, and improvements to outcomes through advice on smoking cessation and other evidence-based interventions.^{1,20} While there is insufficient evidence to recommend screening the whole population, targeted case finding in primary care (e.g. for smokers over the age of 35 years and those with symptoms suggestive of COPD) has been proposed as a strategy to improve rates of diagnosis.²¹ Validated screening questionnaires can improve the accuracy of case finding.²²

Screening for mild disease is controversial as it can lead to overdiagnosis in older age groups²³ and does not improve smoking cessation rates.²⁴ Nonetheless, one study has suggested that screening smokers may yield 10%–20% of previously undiagnosed cases.²⁵ In this study, a substantial proportion were in the moderate to severe categories using Global Initiative for Chronic Obstructive Lung Disease (GOLD) criteria.²⁰ Screening for COPD could also be incorporated as a component part of other screening programmes¹³ (e.g. vascular screening or diabetes screening).

Spirometry is recommended for diagnosis of COPD, and healthcare professionals managing these patients should have access to such facilities, and be appropriately trained, and competent.¹ Proposed standards for spirometry in primary care, compliant with the international recommendations, have been developed.²⁶

The increased workload in primary care from implementation of spirometry screening can be addressed through evolving roles within the primary care health professionals teams and the adoption of a varied skill mix.

Evidence-based interventions**Stop smoking**

Patients should have access to interventions that will impact positively on their condition; for example stopping smoking¹ slows the rate of decline in lung function, with benefits in terms of progression of

symptoms and survival. High-quality smoking cessation services need to be available.

Inhaled therapy

The use of long-acting bronchodilators not only improves QoL and symptoms for patients, but also reduces exacerbation frequency. Combined inhaled steroid and long-acting bronchodilators reduce exacerbations in those with moderate to severe disease.¹ Locally agreed therapeutic protocols should be disseminated across primary and secondary care.

Pulmonary rehabilitation

Pulmonary rehabilitation is a comprehensive multidisciplinary intervention for symptomatic patients with decreased daily life activities. It is supported by grade A evidence²⁷ to show that it improves symptoms, exercise capacity, and QoL. It reduces mortality,²⁸ frequency of exacerbations, and hospital bed days.²⁹ However, it is only available to 2% of those who need it in the UK.⁸ IMPRESS (a collaboration between the GPIAG and the British Thoracic Society [BTS]; www.impressresp.com) has published suggested minimum standards for pulmonary rehabilitation.³⁰

Long-term oxygen therapy

The NICE guideline on the management of COPD includes recommendations on the use of long-term oxygen therapy (LTOT),¹ which reduces mortality and admissions in patients with respiratory failure. The guideline recommends that pulse oximetry, administered by appropriately trained healthcare professionals, should be available in primary care.¹ The BTS guidance on oxygen assessment³¹ should ensure that LTOT use is properly monitored and inappropriate use minimised. This has potential for generating cost savings with integration across primary and secondary care.

Non-invasive ventilation

In hospitalised patients with respiratory failure, non-invasive ventilation (NIV) has been shown both to reduce complications associated with treatment and

length of hospital stay,³² however availability of this procedure is patchy.¹¹

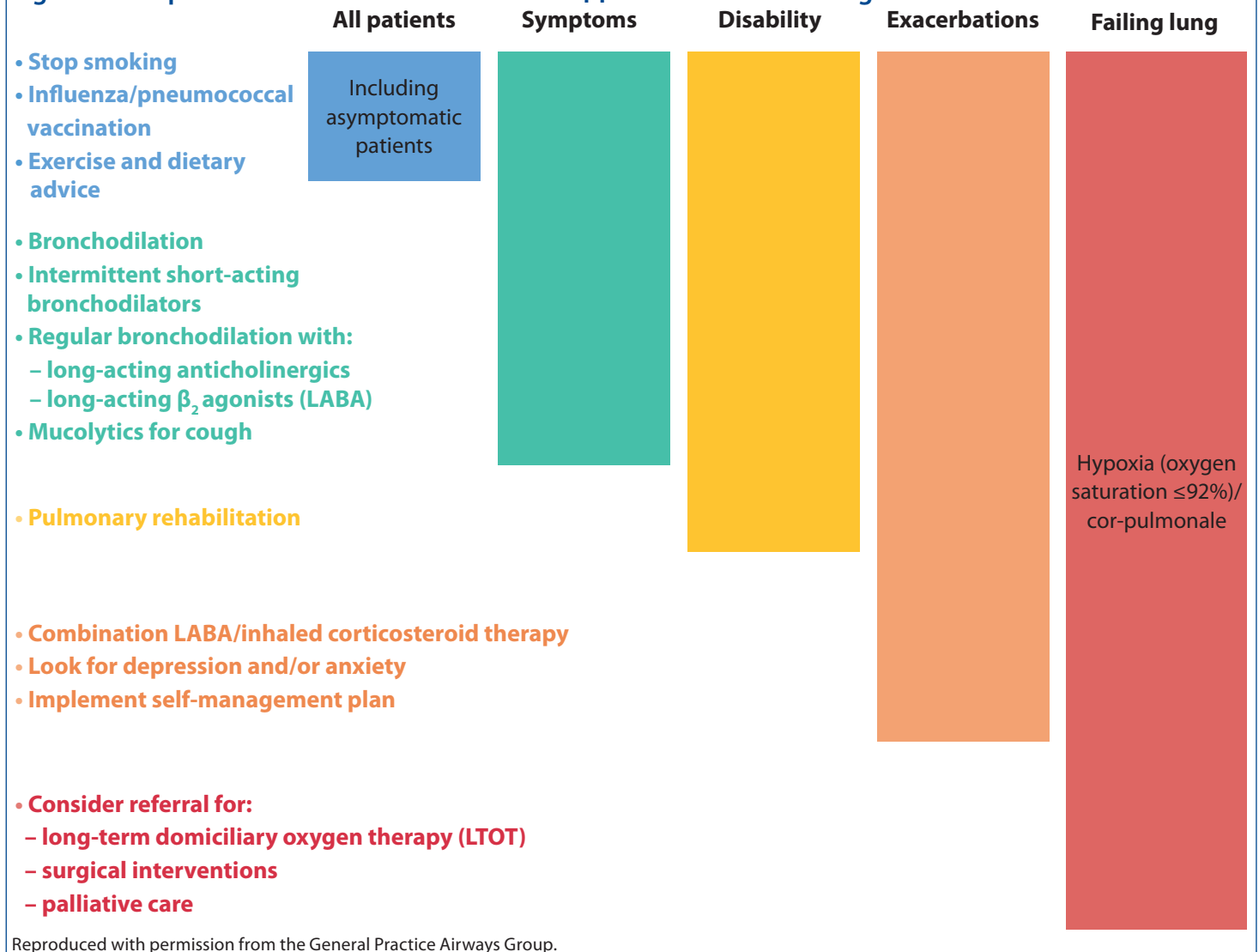
Systematic proactive and planned care

Within the QOF, the Medical Research Council (MRC) dyspnoea score is the only indicator that reflects the impact COPD has on the individual. Measurement of forced expiratory volume in 1 second (FEV₁) correlates poorly with impact of COPD and is not a useful guide to management. Measurement of exacerbation frequency, pulse oximetry, and anxiety and depression scores, for example, are needed to encourage a patient-centred, multidimensional approach to COPD management (see Figure 1, p.56).³³

Locally agreed COPD templates on practice computer systems can collect data in a systematic way. This will help to stratify the COPD population, and allow care to be delivered in a planned and proactive way, as well as acting as a measure of practice performance. Indices of severity such as the DOSE index³⁴ (software.hits-uk.com/demo/copdfast) could be incorporated to help predict outcomes such as hospital admissions and to guide management decisions. Criteria for specialist referral, admission, discharge, and follow up for COPD have been published.³⁵

Exacerbations have a major impact on patients in terms of QoL and lung function. Those with more frequent exacerbations have a more rapid decline in lung function and lower survival rates.³⁵ Nevertheless many exacerbations go unreported and as a result untreated.³⁶ Primary care plays a key role in identifying and treating the majority of exacerbations. Early identification of exacerbations and initiation of prompt, appropriate treatment can reduce recovery time and the need for hospitalisation.³⁷

Self-management plans give carers the confidence needed to carry out medical regimens specific to COPD, guide health behaviour change, and provide emotional support for patients to control their disease. However, there are still insufficient data to make recommendations regarding the form and contents of self-management education programmes in COPD.³⁸

Figure 1: The patient-centred multidimensional approach to COPD management³³

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Education and protocols for exacerbation management should be disseminated locally, and mechanisms should be in place rapidly to identify those who have had a recent exacerbation so that they can be assessed. Lack of awareness of the systemic manifestations of COPD and co-morbidities, such as cardiovascular disease, osteoporosis, anxiety, and depression, needs to be addressed.

Care in the community

Hospital-at-home or early assisted-discharge schemes are suitable ways of managing exacerbations for some patients with COPD, with 25% of admissions possibly being suitable for such schemes, which are associated with reduced healthcare costs. The BTS has drawn up guidelines on

implementation of these schemes,³⁹ which, while they reduce the number of inpatient days without compromising morbidity or patient and carer satisfaction, do not reduce re-admission rates. Staff operating such schemes in the community will need appropriate training and support to ensure patient safety.³⁹

There is little evidence for community based chronic disease management programmes for stable disease⁴⁰ and it is unclear which component of such programmes leads to improved outcomes. Current evidence suggests that to achieve beneficial outcomes in COPD a combination of one or more of the following interventions is necessary:⁴¹

- an extensive self-management programme with an individualised action plan (pulmonary rehabilitation)
- advanced access to care (knowledgeable healthcare providers)

- guideline-based therapy
- a clinical registry (or database).

Personalised care plans will be required for all patients with long-term conditions, which will need to recognise the multidisciplinary nature of COPD management, taking account of co-morbidities. They should be integrated across health and social care.

Palliative care

End-of-life care for patients with COPD is generally poor, because the disease course is unpredictable.⁴² Symptoms late in the disease are often poorly treated, if at all. Palliative care provision for patients with COPD should be addressed where specialist care and hospice provision is not available.

Conclusion

For too long, COPD has remained hidden and poorly recognised compared with other smoking-related diseases. The costs in terms of human suffering and healthcare resources are high, yet many patients remain undiagnosed, and care is often unstructured, with access to worthwhile interventions denied.

The challenge is to deliver truly integrated high-quality care that transcends traditional boundaries. This will give hope to patients with COPD and their carers, who have previously only known 'negativity', and a sense of achievement to those involved in the administration and delivery of their healthcare.

Useful resources

- IMPRESS is a joint initiative between the two leading respiratory clinical societies in the UK: the British Thoracic Society and the General Practice Airways Group. The site contains all you need to know to commission or provide high quality, patient-centred services, integrated between primary and secondary care. www.impressresp.com
- The General Practice Airways Group is an independent charity representing primary care health professionals interested in delivering the best standards of respiratory care. www.gpiag.org

References

1. National Institute for Clinical Excellence. *Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care*. Clinical Guideline 12. London: NICE, 2004.
2. NHS The Information Centre. *QOF disease prevalence 2007–2008*. London: IC, 2008.
3. Stang P, Lydick E, Silberman C et al. The prevalence of COPD: using smoking rates to estimate disease frequency in the general population. *Chest* 2000; **117** (suppl): S354–359.
4. Soriano J, Meier W, Egger P et al. Recent trends in physician diagnosed COPD in women and men in the UK. *Thorax* 2000; **55** (9): 789–794.
5. British Lung Foundation. *Invisible lives. Chronic obstructive pulmonary disease (COPD)—finding the missing millions*. London: BLF, 2007.
6. Office for National Statistics. *Health statistics quarterly, No. 43, Autumn 2009*. Newport: The Information Centre, 2009.
7. Healthcare Commission. *Clearing the air. A national study of chronic obstructive pulmonary disease*. London: Commission for Healthcare Audit and Inspection, 2006.
8. Department of Health. *Annual report of the Chief Medical Officer 2004 on the state of public health*. London: DH, 2005.
9. Price L, Lowe D, Hosker H et al; British Thoracic Society and the Royal College of Physicians Clinical Effectiveness Evaluation Unit (CEEu). UK National COPD Audit 2003: impact of hospital resources and organisation of care on patient outcome following admission for acute COPD exacerbation. *Thorax* 2006; **61** (10): 837–842.
10. Yawn B, Kaplan A. Co-morbidities in people with COPD: a result of multiple diseases, or multiple manifestations of smoking and reactive inflammation. *Prim Care Resp J* 2008; **17** (4): 199–205.
11. The Royal College of Physicians of London, British Thoracic Society, and British Lung Foundation. *Report 4 of the National Chronic Obstructive Pulmonary Disease Audit 2008: Patient Survey*. London: RCP, BTS, and BLF, 2008.
12. British Lung Foundation. *Lost in translation: bridging the communication gap in COPD*. London: BLF, 2006.
13. Gruffydd-Jones K. A National Strategy for the management of chronic obstructive pulmonary disease (COPD) in England: aiming to improve the quality of care for patients. *Prim Care Resp J* 2008; **17** (Suppl 1): S1–S8.
14. General Practice Airways Group, British Thoracic Society. *Best practice guidance on developing a respiratory service specification*. IMPRESS, 2008. Available from www.impressresp.com
15. Pinnock H, Huby G, Powell A et al. *The process of planning, development and implementation of a General Practitioner with a Special Interest service in Primary Care Organisations in England and Wales: a comparative prospective case study. Report for the National Co-ordinating Centre for NHS Service Delivery and Organisation R&D (NCCSDO)*. London: HMSO, 2007.
16. Office for National Statistics. *Smoking-related behaviour and attitudes 2008/09: A report on research using the National Statistics Opinions Survey produced on behalf of the NHS Information Centre for health and social care*. Newport: The Information Centre, 2009.

17. Cancer Research UK. *Lung cancer and smoking statistics: smokers by age*. info.cancerresearchuk.org/cancerstats/types/lung/smoking/#age (accessed September 2009).
18. Office for National Statistics. *Smoking, drinking and drug use among young people in England 2008*. Newport: The Information Centre, 2009.
19. van den Boom G, Rutten-van Mölken M, Tirimanna P et al. Association between health-related quality of life and consultation for respiratory symptoms: the DIMCA programme. *Eur Resp J* 1998; **11**: 67–72.
20. Global Initiative for Chronic Obstructive Lung disease. www.goldcopd.com (accessed August 2009).
21. Price D, Crockett A, Arne M et al. Spirometry in primary care case-identification, diagnosis and management of COPD. *Prim Care Resp J* 2009; **18** (3): 216–223.
22. Price D, Tinkelman D, Nordyke R et al. Scoring system and clinical application of COPD diagnostic questionnaires. *Chest* 2006; **129**: 1531–1539.
23. Schermer T, Smeele I, Thoonen B et al. Current clinical guideline definitions of airflow obstruction and COPD overdiagnosis in primary care. *Eur Resp J* 2008; **32** (4): 945–952.
24. Buffels J, Degryse J, Decramer M, Heyrman J. Spirometry and smoking cessation advice in general practice. A randomised clinical trial. *Respir Med* 2006; **100**: 2012–2017.
25. Tinkelman D, Price D, Nordyke R, Halbert R. COPD screening efforts in primary care: what is the yield? *Prim Care Resp J* 2007; **16** (1): 41–48.
26. Levy M, Quanjer P, Booker R et al. Diagnostic spirometry in primary care: proposed standards for general practice compliant with American Thoracic Society and European Respiratory Society recommendations. *Prim Care Resp J* 2009; **18** (3): 130–147.
27. Berry M, Rejeski W, Adair N, Zaccaro D. Exercise rehabilitation and chronic obstructive pulmonary disease stage. *Am J Respir Crit Care Med* 1999; **160** (4): 1248–1253.
28. Puhan M, Scharplatz M, Troosters T et al. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2009; Issue 1. Art. No.: CD005305. DOI: 10.1002/14651858.CD005305.pub2.
29. Griffiths T, Phillips C, Davies S et al. Cost effectiveness of an outpatient multidisciplinary pulmonary rehabilitation programme. *Thorax* 2001; **56**: 779–784.
30. General Practice Airways Group, British Thoracic Society. *Improving and integrating respiratory services: Principles, definitions and standards for pulmonary rehabilitation*. IMPRESS, 2008. Available from www.impressresp.com
31. British Thoracic Society (BTS) *Working Group on Home Oxygen Services. Clinical component for the home oxygen service in England and Wales*. London: BTS, 2006.
32. Ram F, Picot J, Lightowler J, Wedzicha A. Non-invasive positive pressure ventilation for treatment of respiratory failure due to exacerbations of chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2004; Issue 3. Art. No.: CD004104. DOI: 10.1002/14651858.CD004104.pub3.
33. General Practice Airways Group. *Diagnosis and management of chronic obstructive pulmonary disease in primary care. A guide for those working in primary care*. Reference 1001. Edition 2. Leeds: GPIAG, 2007.
34. Jones R, Chavannes N, Kida K et al. *The DOSE index predicts quality of life, healthcare consumption and mortality*. European Respiratory Society. Annual Conference 2007, abstract 1602. ERS, 2007.
35. British Thoracic Society. BTS statement on criteria for specialist referral, admission, discharge and follow-up for adults with respiratory disease. *Thorax* 2008; **63** (suppl1): i1–i16.
36. Seemungal T, Donaldson G, Paul E et al. Effect of exacerbation on quality of life in patients with chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 1998; **157**: 1418–1422.
37. Wilkinson T, Donaldson G, Hurst J et al. Early therapy improves outcomes of exacerbations of chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 2004; **169**: 1298–1303.
38. Effing T, Monninkhof E, van der Valk P et al. Self-management education for patients with chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 2007; Issue 4. Art.No.: CD002990. DOI:10.1002/14651858.CD002990.pub2.
39. British Thoracic Society, Standards of Care Committee. Intermediate care—hospital-at-home in chronic obstructive pulmonary disease. *Thorax* 2007; **63** (3): 200–210.
40. Taylor S, Candy B, Bryar R et al. Effectiveness of innovations in nurse led chronic disease management for patients with chronic obstructive pulmonary disease: systematic review of evidence. *BMJ*, doi:10.1136/bmj.38512.664167.8F (published 10 August 2005).
41. Adams S, Smith P, Allan P et al. Systematic review of the chronic care model in chronic obstructive pulmonary disease prevention and management. *Arch Intern Med* 2007; **167**: 551–561.
42. Dean M. End-of-life care for COPD patients. *Prim Care Resp J* 2008; **17**: 46–50.

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Conflict of interest statement

Dr Basil Penney has received honoraria for speaking from GSK, AstraZeneca, and Pfizer.