

EDITORIAL

Improving COPD outcomes: a call to arms

See *PCRJ* supplement, Summary of the Consultation on a Strategy for Services for COPD in England, *PCRJ* 2010;19(Suppl 2):S1-17, and article by Roberts *et al.* on page 390

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COPD is one of the main causes of preventable death and disability in the UK. It is the second most common reason for emergency admission to hospital and the fifth commonest cause of readmission. As a result it is very costly for our healthcare system. The COPD Strategy Consultation document¹ published earlier this year by the Department of Health (DH) in England is patient-centred, evidence-based, and clinically led. It recognises that there is substantial scope for improvement in the prevention, diagnosis and management of COPD, and proposes a fundamentally new approach to reducing the disease burden from this condition. The Strategy Consultation is a welcome call to arms for clinicians, commissioners, patients and carers. By insisting on best practice and challenging unexplained variation, the National Health Service (NHS) in England has a key role to play in driving up quality and delivering significantly better outcomes for patients.

Outcomes matter to patients with COPD. This is a chronic progressive disease that causes around 26,000 deaths each year in England and kills more women than breast cancer and more men than prostate cancer. The 90-day mortality following admission to hospital is high at 13.9%.² Exacerbations are common even in mild disease,³ and at the more severe end of the spectrum often require emergency admission with a significant proportion of patients developing respiratory failure. Quality of life and physical/social function are significantly impaired even in those with mild (GOLD stage 1) disease.⁴ Co-morbidities are common in all stages of the disease.⁵ People with COPD are at substantially higher risk of premature death from heart disease and stroke, and death in those with milder COPD is more likely to be due to these co-morbid conditions than to COPD itself. Key reasons for the poor outcomes seen in COPD are poor symptom recognition and late diagnosis of both the COPD and its co-morbid conditions.

The DH COPD Strategy Consultation¹ and the National Institute for Health and Clinical Excellence (NICE) 2010 COPD clinical guideline update⁶ explicitly set out those key elements of health care that influence patient outcomes. In primary care these include: early and accurate diagnosis; support for self-management; quality clinical review in a chronic disease management model; treatment in line with NICE guidance; appropriate referral for oxygen assessment and pulmonary rehabilitation; appropriate assessment and review of oxygen requirement; and detection and management of co-morbid conditions. In the hospital setting, the key elements which influence outcomes include: access to specialist respiratory care and structured hospital admission; early measurement of blood gas status and assessment for non-invasive ventilation; optimal management of co-morbid conditions; and early supported discharge or hospital at home.

There is a significant body of evidence that healthcare interventions do improve outcomes in COPD. A systematic review and meta-analysis⁷ of eight studies confirmed the survival benefit of non-invasive ventilation (NIV) in the management of acidotic respiratory failure, with a number needed to treat (NNT) of only eight to avoid one death. Long term domiciliary NIV in appropriate patients has also been shown to improve survival and quality of life.⁸ Supplemental long-term oxygen therapy in appropriate patients improves both survival⁹ and quality of life.¹⁰ In addition, the TORCH¹¹ and UPLIFT¹² trials demonstrated that inhaled salmeterol/fluticasone combination and tiotropium, respectively, significantly reduce exacerbation and hospitalisation rates and improve quality of life. Patients who receive

prompt medical therapy at the start of an exacerbation are likely to recover more rapidly, have fewer hospitalisations and have better health-related quality of life than those in whom therapy is delayed.¹³ Furthermore, regular moderate physical activity is associated with a 30-50% reduction in risk of both hospital admission and respiratory mortality and with improvements in quality of life measures.¹⁴ The same study demonstrated a median survival difference of seven years between those who take very low levels of physical activity compared with those taking moderate or high levels. Finally, smoking cessation is a powerful intervention that slows the rate of decline in lung function and reduces mortality, and brief advice from healthcare professionals and intensive support are effective at helping patients to quit.¹⁵

So we have well established evidence of what works in COPD. However, at the same time we know that there is substantial variation in the quality of healthcare experienced by patients with COPD. The 2008 National Chronic Obstructive Pulmonary Disease Resources and Outcomes Project (NCROP)^{2,16} provided a comprehensive snapshot of care in almost every secondary care unit in the UK based on nearly 10,000 patients admitted with acute exacerbations of COPD. Thirty-four percent of patients with a strong clinical indication for NIV did not receive NIV, and where the treatment was implemented, less than half of the patients who were acidotic on admission received NIV within the recommended one hour, and 38% waited more than three hours. The NCROP survey also revealed that despite the high mortality in this group of patients, less than half were managed by a respiratory consultant.

Evidence from a range of sources confirms that there is also substantial variation in primary care. Programme budgeting analysis¹⁷ identifies a wide variation in overall spend on respiratory disease and in mortality between Primary Care Trusts (PCTs) serving similar populations. PCTs in the high spend/worse outcome and low spend/worse outcome categories are often poorly performing in other areas such as admission/readmission rates, length of stay and 30-day mortality. Furthermore, indirect standardised mortality rates from bronchitis, emphysema and COPD show significant variation between PCTs grouped into deciles with similar deprivation scores, and after adjusting for deprivation and aggregating nationally, analysis shows that if PCTs below the top quartile improved their performance to that of the top quartile, around 7,800 lives would be saved in England each year (DH, unpublished data 2010).

An estimated 2.1 million people in England are living with undiagnosed COPD.¹⁸ Quality Outcomes Framework (QOF) analysis shows that some general practices are much less efficient than others at identifying cases, with recorded COPD prevalence in 2009-2010 varying from zero to 24.5%.¹⁹ Late diagnosis has a substantial impact on symptom control, quality of life, clinical outcome and cost, because undiagnosed patients receive inappropriate or inadequate treatment. Indeed, a recent study found that 21% of those with undiagnosed COPD have GOLD stage 3 or 4 disease,²⁰ the NCROP survey found that 10% of acute admissions for COPD were in previously undiagnosed patients,² and another recent study from one acute unit in London found that 34% of admissions were

in undiagnosed patients and that one fifth of these were in respiratory failure.²¹ QOF analysis also reveals that some practices are much more likely than others to exempt their patients from QOF targets,¹⁹ and these patients are at high risk of not receiving appropriate care.

There is also substantial variation in the performance and interpretation of spirometry in primary care, with errors in both diagnosis and disease classification leading to inappropriate treatment. Indeed, because of misdiagnosis, practice COPD registers may include significant numbers of patients who do not have COPD; a survey of practices in Devon found that over a quarter of patients on COPD registers did not meet the diagnostic criteria for inclusion.²² Other survey evidence^{2,17,23} shows substantial variation in the primary care chronic disease management of COPD in terms of prescribing, flu vaccination, MRC breathlessness scoring, pulse oximetry and referral for oxygen assessment, referral for pulmonary rehabilitation, smoking cessation support, and provision of standby medication. Analysis within PCTs shows that emergency admission rates for COPD also vary considerably between practices.¹⁷

So if they are to improve outcomes for patients with COPD, local clinicians and commissioners have a responsibility to identify and challenge variation that may be unwarranted. They will want to know whether all local providers have similar systems and offer similar services to the best performing providers. Is there, for example, a local programme of case-finding to ensure early diagnosis, to optimise proactive management and to minimise the risk of expensive hospital admission? Do general practices and community providers offer quality-assured diagnostic spirometry, proactive chronic disease management of COPD and co-morbid conditions, and support for self-management? Do hospitals offer access to specialist respiratory care, structured hospital admission, NIV and support for treatment at home? In essence, is care for patients integrated along the lines of the excellent and innovative project described by Roberts *et al.*²⁴ in this issue of the *Primary Care Respiratory Journal (PCRJ)*?

The DH COPD Strategy Consultation has been developed by clinicians and commissioners, patients and other stakeholders. Through better prevention and more effective treatment, the aim is to alter the disease burden fundamentally by preventing the development of COPD in the first place and slowing progression in those who already have the disease. The strategy is based securely on the premise that evidence-based healthcare improves outcomes, and that unwarranted variation in healthcare signals poor outcomes. The publication this month of a *PCRJ* supplement²⁵ which summarises the Strategy Consultation document and which clearly links the Consultation recommendations¹ with the 2010 evidence-based NICE guideline,⁶ is a crucial step in implementing the strategy. In articulating a more proactive, integrated and holistic approach, the strategy offers an invaluable resource for those responsible for commissioning services that will improve outcomes for local populations and for those people living with long-term lung disease.

Conflict of interest declaration

None declared.

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