

Strengthening Management of COPD – a Partnership Approach

1. Introduction

Chronic Obstructive Pulmonary Disease (COPD) presents major challenges to the National Health Service. It accounts for more than one fifth of all respiratory deaths (>25,000/year), is the second most common cause of hospital emergency admission¹ and is estimated to cost the UK healthcare system £810m-£930m a year². More than 3 million people are believed to have the disease, of which an estimated 2 million are undiagnosed³. Mortality rates are increasing.

NHS East Midlands identified the potential to improve care for such patients and achieve productivity savings at the same time – in particular, by shifting the focus of care from hospital to the community. In the East Midlands in 2010-11, COPD was the cause of more than 11,000 unplanned hospital admissions at a cost of over £26m⁴.

Here, we describe a number of partnership initiatives across NHS East Midlands (NHSEM), Nottingham North and East Clinical Commissioning Group (CCG), GlaxoSmithKline (GSK), healthcare professionals and the patient.

2. The setting

NHSEM initiated a pilot project within an emerging CCG to improve the diagnosis and management of patients with COPD by primary care. NNE CCG in Nottinghamshire County was selected, given it had prioritised the disease – with smoking and coal mining significant contributory factors, within a local population of 145,000. Across Nottingham County as a whole, COPD reported prevalence in 2010-11 was 1.9% – well above the national figure of 1.5%⁵.

The NNE CCG was aware of variation within its COPD clinical practice and had established a series of interventions to address it. This included funding a lead COPD nurse to focus on education of healthcare professionals to work alongside the established COPD community team whose capacity had been increased (providing pulmonary rehabilitation and case management). Further, the CCG had introduced a monthly integrated community-based session, led by a respiratory consultant including patient review as well as education for healthcare professionals. A GP lead for the CCG had been identified and a COPD strategy group established with quarterly meetings.

NHSEM developed a partnership arrangement with private sector support with GSK. GSK committed matched resource and this Joint Working was underpinned by the principles outlined by the Association of the British Pharmaceutical Industry (ABPI)⁶.

The CCG launched a programme to support and engage all of its 21 general practices, to assess the quality of COPD management at a local level, identify issues and spread best practice – with a strong focus on the development of healthcare professionals.

3. The POINTS partnership

GSK support came through the provision and deployment of the Patient Outcomes and Information Service (POINTS). The POINTS software creates a standardised template so that data collected on patients with COPD is consistent and comparable. The data were collated and GSK Respiratory Care Associates fed the results back to each practice and the CCG.

The initial POINTS audit was implemented in June 2011, analysing the total recorded COPD population of each practice. Among the variables documented in the audit were:

- Record of smoking status, body mass index, dyspnoea (breathlessness) score using the Medical Research Council (MRC) scale, exacerbation frequency, health status (using the CAT – COPD Assessment Tool⁷).
- Record of spirometry lung function tests to assess presence and degree of airflow obstruction
- Medical treatment - including pulmonary rehabilitation referral, oxygen use, vaccination, smoking health education and pharmacological therapies. Further treatments could be stratified by severity of airflow obstruction.

The process involved 2697 patients registered by practices as having COPD. It was repeated mid-term, with a final audit carried out in June 2012. POINTS enabled the structured management of COPD by individual practices to be assessed, including their adherence to salient elements of the National Institute for Health and Clinical Excellence (NICE) COPD guideline 2010³. This was supported through work by the GSK Respiratory Care Associates.

4. CCG led initiatives

a. Spirometry and COPD review service evaluation

Spirometry should demonstrate airflow obstruction, which is required to confirm the diagnosis in a patient with a supportive history, examination and risk factors such as smoking. Whilst the POINTS audit would document the proportion of patients having spirometry and the presence and degree of the airflow obstruction, there was a concern within the CCG of the variation in quality of spirometry testing and interpretation, which would undermine this crucial assessment. Further, a grassroots approach was needed to ensure there was access to the equipment.

The CCG performed a supporting service evaluation of COPD practice, led by the CCG's lead COPD nurse, who visited the lead COPD or respiratory nurse at every practice to initially assess:

- Respiratory and spirometry qualifications
- The type of spirometer used and whether it produced the key variables (forced expiratory volume in one second (FEV₁) and forced vital capacity (FVC)) and a hard printed copy, as recommended in the NICE COPD guideline³
- If the practice had a calibration syringe and whether calibration was performed
- Knowledge of good COPD practice, focusing on NICE COPD guideline³.

Of the 21 surgeries, 18 (86%) of practice nurses were unaware of the salient key features of the NICE COPD guideline 2010. Only 6 practices calibrated their spirometers prior to use as recommended to ensure accurate spirometry tracings and 8 practices had no calibration syringe.

All nurses performing spirometry were subsequently asked to submit ten spirometry tracings, with interpretation and evidence of calibration to a named respiratory consultant for further assessment. This established that 13 of the 28 nurses spirometry tracings were of an unacceptable standard and 12 nurses supplied incorrect interpretations.

b. Healthcare professional training

The CCG took action to meet the training needs of healthcare professionals, both through targeted feedback within individual practices by the lead COPD nurse and three collective workshops for nurses and GPs, based on locality and aimed to fit with availability. This was funded by the CCG and delivered by a respiratory consultant, COPD nurse and CCG prescribing advisors. It was supported by the COPD community team.

This training focused on driving up the quality and quantity of patient reviews, enhancing COPD diagnosis (including correcting previous misdiagnosis), improving data recording, exploring all aspects of management including non-pharmacological therapies, and reviewing under- and over-medication to reduce exacerbations. Examples were drawn from the POINTS data. To address

exacerbations, greater emphasis was put on educating patients and providing more information about managing their condition. Whilst spirometry is key to confirm diagnosis and the severity of airflow obstruction is important, there are other fundamental severity measures that need to be the basis of the COPD review. A separate stream of training to enhance the role of the CCG prescribing advisors in the management of COPD was also enabled.

5. Impact

a. Evident in POINTS re-audit

The project interventions aimed to build a better COPD service for the patient. Despite the comparatively short time scale in the POINTS re-audit, there is already clear evidence of a positive impact on COPD management.

Collaboration between the East Midlands Quality Observatory and GSK enabled the development of a dashboard to track changes recorded by POINTS over the course of this project. This identified improvements in three ways:

1. The proportion of patient reviews conducted in accordance with NICE guidelines³ increased from 55% to 68% (Figure 1)
2. The proportion of patients receiving a COPD review rose from 67% to 70%
3. Recording of exacerbation frequency improved more than four-fold to 60% (Figure 2)

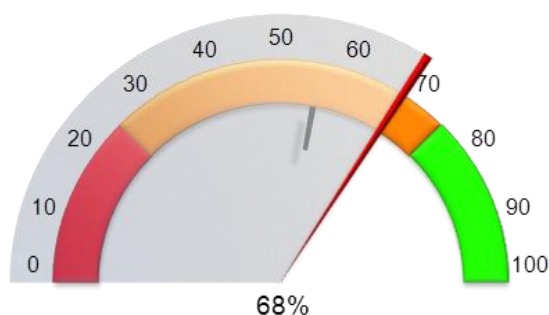


Figure 1. COPD key data recording assessment in line with NICE



Figure 2. Recording exacerbations

Short line = June 2011, longer line = June 2012

However, there was significant variation between general practices and opportunities for improved clinical management:

- Across the CCG, COPD prevalence was 1.86%, but with a range between practices of 0.81%-2.92%
- 70% of the local COPD population had been reviewed in the past year. Between practices, this rate ranged from 34% to 80%
- 941 registered COPD patients (almost 35% of the CCG total) had not had a spirometry test in the previous 12-15 months
- Up to 20% of registered COPD patients in whom spirometry had been performed had a normal or increased FEV₁/FVC ratio during their spirometry lung function test – which is not consistent with the airflow obstruction of COPD.

With respect to the various interventions for COPD, there was a low referral rate to pulmonary rehabilitation and many patients were treated outside of license for prescribed medications: for example inhaled corticosteroid / long acting beta-2-agonist combinations (ICS/LABA) or even triple therapy were prescribed to patients with mild / moderate airflow obstruction or where there was no spirometry evidence of COPD (ICS/LABA licensed for frequent exacerbators with more severe

airflow obstruction). In addition, less expensive LABA inhalers instead of Long Acting Muscarinic Agonists (LAMA) were not used as frequently as they could have been, in accordance with local and NICE guidance.

b. Patient experience

All patients undergoing a COPD review were invited to complete a patient experience questionnaire developed with support from GSK, after practice nurses had undergone training. The survey was anonymised and returned directly to the NHS in a freepost envelope to minimise bias. In total, only 106 questionnaires were received from 17 of the 21 participating practices and of these, 62 were fully completed.

The survey indicated that the patients who answered the questionnaire had a greater understanding of COPD and their confidence in self-management of the condition grew following the COPD review. On a Likert scale (1=No understanding, 10=Total understanding), mean understanding of their lung condition increased from 7.5 to 8.8.

51% of this patient cohort felt more knowledgeable about what to do if their symptoms worsened, 47% had a better understanding of their medication, 44% of their inhalers, and 45% clearer about taking care of their own COPD.

c. Staff training

Healthcare professionals were invited to assess the three workshops. Feedback was positive, with all but one participant evaluating their workshop as the maximum “extremely useful” on a 5-point Likert scale. The training was described as “excellent”, “clear and relevant”, “very up to date and practical”, “instructive”, “a very valuable exercise”, and “well worth the time”.

6. The learning

NNE CCG is on a journey, and there is still some way to go. Training should impact clinical practice positively and lead to the optimisation of patient care. In turn, time is needed to change main health economic outcomes such as unplanned hospital admissions. The quality of COPD reviews has improved markedly, which leads to increased understanding and confidence by both patients and healthcare professionals. The training provided is making local COPD management more proactive and coherent.

However, the POINTS data confirms that a significant number of patients still remain on the COPD register, even though there is no evidence of airflow obstruction suggesting potential been misdiagnosis. These cases identify further training needs but the software also allows case review to prioritise these patients to determine correct diagnosis and management. Accurate spirometry is essential to confirm diagnosis in tandem with clinical review, and local spirometry accreditation and training will continue to require attention.

COPD misdiagnosis is nothing new having been reported in a number of other published studies⁸. However, the POINTS audit has identified priorities for NNE CCG including case reviews of

- never smokers (smoking being the main but not only cause of COPD)
- subjects with no evidence of airflow obstruction – which is expected in the majority of patients with COPD
- those who have not had spirometry confirmation of a COPD diagnosis

Such potential anomalies had not previously triggered further action, because the right protocols were not in place.

Best practice in COPD care has the potential to reduce prescribing costs and emergency attendances at hospital. Amongst NNE CCG patients, there has, as yet, been no noticeable change in prescribing, in part due to a characteristic of the POINTS software – where the download includes any prescription for that drug in the 6 months preceding and hence the 1 year re-audit of

this data would not allow training to have distilled out. Reversing treatment plans such as stopping inappropriate therapies is time consuming and requires patient engagement in the process. However they can lead to dramatic cost savings and reduction in side effects. A key part of training is empowering/ building the confidence of the practice team to reduce or withdraw unnecessary treatments in patients who may have received such treatment for some time. It demonstrates the importance of getting both diagnosis and medication right at the outset to prevent reversing management decisions. Further, change and optimisation of therapy requires time to translate into hard endpoints of unplanned hospital admissions.

The audit has permitted a detailed picture of the NNE CCG care of COPD for the first time. It provided a systematic way of gathering data across a large cluster population, and has clearly demonstrated clinical variation. Healthcare professionals within the CCG continue to address the clinical issues. There are opportunities to improve which the audit highlights together with areas to focus on.

7. Next steps

NNE CCG continues to build on what has been achieved and continue to reduce unwarranted variation across the CCG. One key next step will involve the lead COPD nurse working intensively with three practices whose size offers the greatest opportunity for improvement.

The focus will be on the quality of COPD reviews with respect to NICE COPD guideline³ and the accuracy of COPD registers. This requires a multifaceted approach on a case-by-case basis – ensuring age, symptoms, exposure to a risk factor such as tobacco smoke are in keeping with diagnosis; there is evidence of spirometry and where present there is satisfactory quality of the spirometry trace and the results confirm airflow obstruction. Where the diagnosis is in doubt, patients will be recalled for a full review of actual respiratory diagnosis and appropriate treatment. This will be done in unison with the practice nurses to provide further training needs.

Community sessions, led by the respiratory consultant will continue and include clinics for patients with specific needs such as frequent exacerbators, diagnostic dilemmas, where symptoms do not match spirometry airflow obstruction severity or specific interventions might be necessitated. A training session will continue including multidisciplinary discussion of other cases and challenging circumstances – for example nutrition and oxygen.

Of major importance is to proactively ensure that a new COPD diagnosis is not made without review of all the key aspects such as quantifying risk factors and performing spirometry. Further, that the training enables correct management from the outset. Plans are now provided for all patients with COPD to help them self-manage their condition and to provide access to a range of support services. This needs to be delivered to the patient with education. The importance of integrated working between healthcare providers to ensure correct diagnosis and treatment is recognised, and the role of respiratory consultants and the nurse educator across the CCG is realised.

Learning from this project has informed the development of recommendations for other CCGs and general practices:

Recommended actions for Clinical Commissioning Groups

- A dedicated lead GP to keep COPD on the agenda
- A nurse educator with a special interest in COPD/asthma (and with clinical support from a respiratory consultant) to help GPs and nurses with assessment, database management and treatments
- Involvement of a respiratory consultant in education and COPD case review
- Effective data collection so that COPD performance can be monitored
- Regular patient surveys to assess their knowledge of, and confidence in, self-care
- Monitor and reduce variation in exception reporting
- Peer support: partnering high and low performing practices
- Performance monitoring COPD management through hard outcome measures, eg:
 - Admission and readmission rates
 - Smoking prevalence and trend; number of quitters.
 - Number referred and completing pulmonary rehabilitation
 - Mortality and years of life lost
 - Prescribing cost per 1,000 of COPD population
 - Cost of oxygen per 1,000 of COPD population

Recommended actions for general practices

- A lead GP for COPD at each practice
- A nominated clinical lead for spirometry
- A nominated clinical lead for the COPD register
- Review of the COPD database to identify potential misdiagnosis – initially focusing on:
 - Never smokers
 - Those with a normal FEV₁
 - Those with a normal or high FEV₁/FVC ratio
 - Inhaled treatments of those with an FEV₁ >50% predicted
- No additions to the COPD register without sight of the spirometry trace and sign-off by the practice lead
- Promotion to patients of community pharmacists as a source of medication support

This project has achieved substantial benefits. However, there is still much more to do. Commissioning best value for patients with COPD in NNE will be possible if some of the savings arising from prescribing changes and fewer hospital admissions are re-invested in pulmonary rehabilitation, staff support and education, integrated case management and smoking⁹.

The resource provided through prioritisation by the CCG and SHA and partnership working with GlaxoSmithKline has been essential for highlighting areas of need. Arguably, the clear commitment from partners and the pooling of expertise and resources have enabled the successful delivery of a more insightful project than could have been established by working alone. Through this, focused teaching, training, development of pathways and provision of integrated care can be established by the health care professionals working with the CCG. It is an approach that will be continued.

References

¹ Right Care (2012) *NHS Atlas of Variation in Healthcare for People with Respiratory Disease, September 2012*. <http://www.rightcare.nhs.uk/atlas>.

-
- ² British Thoracic Society (2006) *The Burden of Lung Disease*, 2nd edition. BTS. Accessed 29 January 2013. http://www.brit-thoracic.org.uk/Portals/0/Library/BTS%20Publications/burdeon_of_lung_disease2007.pdf
- ³ National Clinical Guideline Centre (2010) Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care (COPD (update)). Accessed 29 January 2013. <http://guidance.nice.org.uk/CG101/Guidance/pdf/English>
- ⁴ Dr Foster/IMS Regional Healthcare Analysis data: COPD Non – Elective Admissions (J40-44 & J47), East Midlands SHA, April 2010 – March 2011. Accessed 29 January 2013.
- ⁵ NHS Information Centre Quality and Outcomes Framework (QOF) for April 2010 - March 2011, England. Accessed 29 January 2013. <https://catalogue.ic.nhs.uk/publications/primary-care/qof/qual-outc-fram-10-11-pct/qof-10-11-data-tab-prev-pct.xls>
- ⁶ Department of Health/Association of British Pharmaceutical Industries (2010) *Moving beyond sponsorship: Interactive toolkit for joint working between the NHS and the pharmaceutical industry*. Crown and ABPI. Accessed 29 January 2013. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_082840
- ⁷ COPD Assessment Test, last modified 9 February 2013, <http://www.catestonline.org/>
- ⁸ Various studies, including: Bolton CE, Ionescu AA, Edwards PH, Faulkner TA, Edwards SM, Shale DJ. (2005) Attaining a correct diagnosis of COPD in general practice. *Respiratory Medicine* 99: 493-500.
- ⁹ Williams S, Baxter N, Holmes S, Restrict L, Scullion J, Ward M (2012) *IMPRESS guide to the relative value of COPD interventions*. ISSN 2040-2023: British Thoracic Society Reports Vol 4, Issue 2, 2012. http://www.impressresp.com/index.php?option=com_docman&Itemid=82