

National COPD Audit Programme



COPD in England – Finding the measure of success

National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Primary care report for England 2014–15

November 2016

Prepared by:



**Royal College
of Physicians**



Royal College of
General Practitioners

In partnership with:



**British
Thoracic
Society**



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Citation for this document: Baxter N, Holzhauser-Barrie J, McMillan V, Saleem Khan M, Skipper E, Roberts CM. *COPD in England – Finding the measure of success. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Primary care report for England 2014–15*. London: RCP, November 2016.

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ISBN 978-1-86016-634-1
eISBN 978-1-86016-635-8

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Registered charity no 210508

Document purpose	To disseminate data to give a picture of how the care of people with COPD in primary care was being delivered in England in 2014–15
Title	<i>COPD in England – Finding the measure of success: National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Primary care report for England 2014–15.</i>
Authors	Baxter N, Holzhauer-Barrie J, McMillan V, Saleem Khan M, Skipper E, Roberts CM (on behalf of the National COPD Audit Programme: primary care workstream)
Publication date	November 2016
Audience	Health professionals, NHS managers, chief executives and board members, service commissioners, policymakers, voluntary organisations, patient support groups, COPD patients, their families/carers and the public
Description	<p>This report is being published as part of the National COPD Audit Programme. It details national data relating to primary-care-delivered COPD care in England. This report is relevant to anyone with an interest in COPD. It provides a broad view of primary care services, and will enable lay people, as well as experts, to understand how COPD services function currently, and where change needs to occur.</p> <p>The information, key findings and recommendations outlined in the report are designed to provide readers with a basis for identifying areas in need of change and to facilitate development of improvement programmes that are relevant not only to primary care providers but also to commissioners and policymakers.</p>
Supersedes	There is no scheduled review date for this report, which presents publicly available information on the care of people with COPD in primary care in England, in combination with pertinent results from the first of three annual audits conducted in Wales. Reports on future Welsh audit cycles, which are anticipated to be published in 2017 and 2018, will, therefore, add to the learning contained within this report.
Related publications	<ul style="list-style-type: none"> • National Institute for Health and Care Excellence. <i>Chronic obstructive pulmonary disease in adults</i>. Quality Standard 10 (QS10). London: NICE, 2016. www.nice.org.uk/guidance/qs10 • National Institute for Health and Care Excellence. <i>Smoking: supporting people to stop</i>. Quality Standard 43 (QS43). London: NICE, 2013. www.nice.org.uk/guidance/qs43 • National Institute for Health and Care Excellence. <i>Chronic obstructive pulmonary disease in over 16s: diagnosis and management</i>. Clinical Guideline 101 (CG101). London: NICE, 2010. www.nice.org.uk/guidance/CG101 • Stone RA, Holzhauer-Barrie J, Lowe D, Searle L, Skipper E, Welham S, Roberts CM. <i>COPD: Who cares? National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Resources and organisation of care in acute NHS units in England and Wales 2014</i>. National organisational audit report. London: RCP, November 2014. www.rcplondon.ac.uk/projects/outputs/copd-who-cares-organisational-audit-2014 • Stone RA, Holzhauer-Barrie J, Lowe D, Searle L, Skipper E, Welham S, Roberts CM. <i>COPD: Who cares matters. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical audit of COPD exacerbations admitted to acute units in England and Wales 2014</i>. National clinical audit report. London: RCP, February 2015. www.rcplondon.ac.uk/projects/outputs/copd-who-cares-matters-clinical-audit-2014 • Steiner M, Holzhauer-Barrie J, Lowe D, Searle L, Skipper E, Welham S, Roberts CM. <i>Pulmonary Rehabilitation: Time to breathe better. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Resources and organisation of Pulmonary Rehabilitation services in England and Wales 2015</i>. National organisational audit report. London: RCP, November 2015. www.rcplondon.ac.uk/projects/outputs/pulmonary-rehabilitation-time-breathe-better • Steiner M, Holzhauer-Barrie J, Lowe D, Searle L, Skipper E, Welham S, Roberts CM. <i>Pulmonary Rehabilitation: Steps to breathe better. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical audit of Pulmonary Rehabilitation services in England and Wales 2015</i>. National clinical audit report. London: RCP, February 2016. www.rcplondon.ac.uk/projects/outputs/pulmonary-rehabilitation-steps-breathe-better • Baxter N, Holzhauer-Barrie J, McMillan V, Saleem Khan M, Skipper E, Roberts CM. <i>Time to take a breath. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical audit of COPD in primary care in Wales 2014–15</i>. National clinical audit report. London: RCP, October 2016. www.rcplondon.ac.uk/projects/outputs/primary-care-time-take-breath
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Report preparation

This report was written by the following, on behalf of the national COPD primary care audit 2014–15 workstream group. (The full list of workstream group members is included at [Appendix A.](#))

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Foreword

Chronic obstructive pulmonary disease (COPD) inflicts a huge toll on individual patients, their carers, and on the NHS. In total, 1.2 million people in the UK have been diagnosed with COPD and 30,000 people die of the disease each year.¹

Previous national COPD audits have concentrated on acute management of COPD in secondary and tertiary care, but the current National COPD Audit Programme (commissioned in 2013) includes an audit of primary care for the first time. The original aim of the primary care audit was to collect data from practices in England and Wales relating to the routine care of people with COPD, which went beyond that provided by publicly available data sources. The metrics were based on recommendations in the COPD Clinical Guidelines and COPD Quality Standards produced by the National Institute for Health and Care Excellence (NICE) in 2010, 2013 and 2016^{2,3,4} respectively.

However, there were significant challenges and delays to the audit due to increasing limitations on data extraction from practices in England; therefore, the audit went ahead in Wales but not in England. This report for England can, therefore, only reflect on what is known already from publicly available data. Where possible and potentially helpful, data extracted from practices in Wales are considered in terms of their relevance to England. This report also reflects on relevant results from reports that have already been published by the National COPD Audit Programme.

The data from Wales showed variation, some of which may have been due to differences in data recording and some of which may have been due to variations in patient demographics and acuity. Further local analysis will be required to better ascertain and understand the reasons for this variation. There is undoubtedly a need for greater clarification about what should be asked during a routine COPD review and how this should be recorded.

We have not had the opportunity in this report to present new and granular detail about the care of people with COPD in England. However, based on the data that are available, this report highlights the need for regional or national templates for COPD review with standardised coding. Confidence in accurate diagnosis of COPD needs to improve. In addition, effectively targeted pharmacological treatments to prevent exacerbations, improve quality of life, relieve breathlessness and treat tobacco dependency, and the individualised mind and body treatment package of pulmonary rehabilitation, can greatly improve the quality of life of many people with COPD. This report provides the springboard for primary care to make sure that the right people get the correct diagnosis and receive effective treatment, whoever they are and wherever they are.

A handwritten signature in black ink that reads "K Gruffydd-Jones." The signature is written in a cursive style and is underlined with a single horizontal line.

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Executive summary

This report uses publicly available data from 2014–15 to give a picture of the care of patients with COPD in the general practice setting in England. The material used has been sourced from:

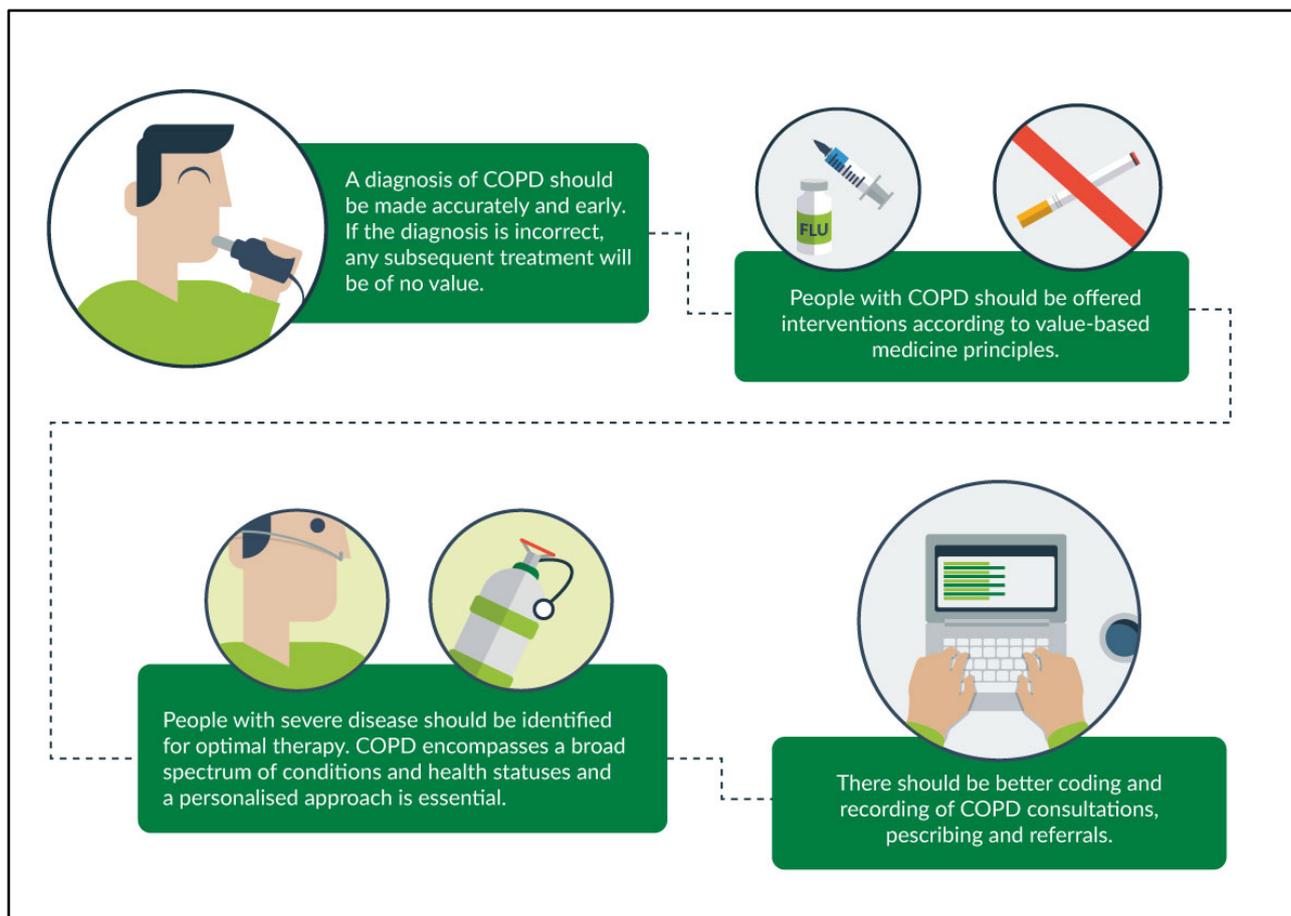
1. Quality and Outcomes Framework (QOF) 2014–15⁵
2. Public Health England's (PHE's) tobacco control profiles⁶ and Interactive Health Atlas of Lung conditions in England (INHALE).⁷

The audit programme had originally intended to collect data from practices in England relating to the routine care of people with COPD. However, significant challenges and delays were experienced due to increasing limitations on data extraction from English practices and, consequently, this was not possible.

The National COPD Audit Programme continues to believe that patient-level extraction of primary care data is vital to accurately answer the audit questions, as well as to obtain a comprehensive view of the journey of people with COPD through the healthcare system. In addition, the Welsh experience shows that it is possible to extract data from general practice without placing additional burden on the staff within the sector. We hope that the results from Wales will demonstrate the potential benefits of audit for assessing the quality of patient care, as well as providing confidence that it is possible to conduct an audit of this type securely and in a time-efficient manner.

In addition, this report reiterates pertinent findings and learning from the primary care audit for Wales.⁸ In Wales, a total of 280 practices (61%) took part in the audit, which included the records of 48,029 people with COPD. Using Read-coded data entered by primary care clinicians, we extracted key measures at the patient level to answer our audit questions. The results highlighted areas in which quality improvement is needed, some of which are transferrable to England. For example, the results of the extraction of practice data in Wales demonstrated that the computerised coding of how a COPD diagnosis is made was not consistent between practices. Consequently, coding provided confidence in diagnosis for only 14.4% of people on COPD registers. Where there was evidence that spirometry had been performed, one-quarter of the values were not consistent with a diagnosis of COPD. We have not been able to source any current data to answer this question for England. We therefore recommend that practices and clinical commissioning groups (CCGs) consider exploring this, and other learning points outlined in the report, by running similar audit queries on their own populations. Any CCG that wants to run such an audit query should review the technical documents available on the National COPD Audit Programme's primary care website, which detail the Read code queries used in the audit of primary care in Wales in 2014–15.⁹ Queries for the second cycle of audit, which will have been refined based on learnings from the first Welsh national audit, will be available to download from the website in spring 2017.

This report fundamentally aims to support primary care clinicians who are currently working under considerable pressure to deliver the standard of care for people with COPD. We hope to do this by sharing good practice and providing advice on how to address apparent deficiencies in care. To that effect, the report makes the following key recommendations.



Along with the national secondary care^{10,11} and pulmonary rehabilitation^{12,13} audit reports, this report helps to complete a picture of the COPD care offered to patients in England.

Recommendations

These recommendations are based on the learnings from the audit in Wales, a country with QOF results that are similar to those in England. We recommend that practices and CCGs consider gathering more intelligence locally to determine how relevant these recommendations are to their area.

A diagnosis of COPD should be made accurately and early. If the diagnosis is incorrect, any subsequent treatment will be of no value.

- a. People who have breathlessness and/or cough that does not go away or frequent ‘chest infections’ should have access to health professionals who have been trained to know what to do and have the resources to reach a diagnosis in a timely way. Spirometry is fundamental to a diagnosis of COPD and patients should be assured that their test has been performed and interpreted in the right way. CCGs and providers are alerted to the training standards included in the National Register of certified professionals and operators for spirometry.¹⁴
- b. Trained and competent health workers should offer people with a risk factor and symptoms of COPD a comprehensive and structured assessment of those complaints.
- c. People who are at risk of COPD are at a higher risk of lung cancer, and chest X-ray is an essential part of the breathlessness assessment and diagnosis of COPD.

People with COPD should be offered interventions according to value-based medicine principles.¹⁵

- a. Tobacco dependence treatment is safe, well tolerated and effective at prolonging life: it reduces flare ups and has a wider impact on health. However, it is underused. Health professionals who treat people with COPD should be trained to have the right conversation; to know how to assess dependency; and to feel confident and have the resource to treat it.
- b. Flu vaccination is effective and safe but underused in people with COPD. System leaders should identify where variation exists and ensure that people with COPD have the best information to make the right decision for them.
- c. Anyone with a Medical Research Council (MRC) breathlessness grade of 3 or more should be offered and encouraged to do pulmonary rehabilitation by their primary care health professional and have timely and easy access to an appropriate provider of this evidence-based therapy.
- d. Health professionals providing inhaler therapy for COPD should have up-to-date knowledge about what devices are available and ensure that people are able to use their devices (NICE CG101, 1.2.2.11 to 1.2.2.14);³ are offered optimal bronchodilator medication (NICE CG101, 1.1.6);³ and are issued with inhaled corticosteroids (ICS) only when it is likely to be beneficial (NICE CG101, 1.2.2.2 and 1.2.2.3).³ They should ensure that safety of long-term, high-dose inhaled steroids is discussed (NICE CG101 1.1.8).³

People with more severe disease (categorised according to the extent of airflow limitation)¹⁶ should be identified for optimal therapy. COPD encompasses a broad spectrum of conditions and health statuses and a personalised approach is essential.

- a. People having frequent exacerbations of COPD need to be identified, as they are at higher risk of an accelerated decline in their condition and may require specialist review both to manage symptoms and slow decline. The recording of ‘number of exacerbations in the last year’ allows this group to be better identified by practices and prioritised.
- b. Long-term oxygen therapy is a life prolonging intervention for people with COPD who have hypoxia. When primary care health professionals detect low oxygen saturation in the primary care setting, referral to a suitable assessment and review service should be offered. Primary care should record the use of oxygen on patient notes as they would any other long-term medication, to ensure timely review for assessment of safety and effectiveness.

There should be better coding and recording of COPD consultations, prescribing and referrals.

- a. As patient access to personal health records improves and patients' involvement in their own care becomes an expected norm, there will be opportunities to ensure that people with COPD 'know their numbers' or, in other words, understand why their spirometry test is consistent with COPD. They should be able to record quality of life assessments, their ability and confidence to use inhalers and their understanding of how to help themselves through access to, and involvement with, self-care documentation and action plans.
- b. Much of the variation seen in the Welsh data suggests variance in electronic coding.⁸ In order to link datasets across the system in the future, we ask the wider system (whether through development of the Systematised Nomenclature of Medicine coding system or other activity) to make standard recording templates available to ensure that the right things are recorded and that health professionals can spend more time with patients by avoiding the time spent on duplicate entries or manual entry.

Introduction

The National COPD Audit Programme (commissioned by the Healthcare Quality Improvement Partnership (HQIP) on behalf of NHS England and NHS Wales as part of the National Clinical Audit Programme (NCA)) sets out a programme of work that aims to drive improvements in the quality of care and services provided for patients with COPD in England and Wales. For the first time in respiratory audit, the programme is looking at COPD care across the patient pathway, both in and out of hospital, bringing together key elements from the primary, secondary and community care sectors.

The programme is led by the Royal College of Physicians (RCP), working in partnership with the British Thoracic Society (BTS), the British Lung Foundation (BLF), the Primary Care Respiratory Society UK (PCRS-UK), the Royal College of General Practitioners (RCGP) and NHS Digital.

There are four programme workstreams:

1. Primary care: collection of audit data from general practice patient record systems in Wales. Delivered by the RCP and NHS Digital, working with the PCRS-UK, the RCGP and the NHS Wales Informatics Service.
2. Secondary care: in 2014 there were snapshot audits of patients admitted to hospital with COPD exacerbation, plus organisational audits of the resourcing of COPD services in acute units. The 2014 audits were delivered by the BTS, working with the RCP. A continuous audit of admissions to hospital with COPD exacerbation will commence in 2017.
3. Pulmonary rehabilitation: audits of patients attending pulmonary rehabilitation (including outcomes at 180 days), plus organisational audits of the resourcing of pulmonary rehabilitation services for patients with COPD. The 2015 round of this audit was delivered by the BTS, working with the RCP. Another round of snapshot clinical and organisational audits will commence in 2017.
4. Patient Reported Experience Measures (PREMs): 1-year development work exploring the potential/feasibility for PREMs to be incorporated into the programme in the future. Delivered by the BLF, working with Picker Institute Europe.¹⁷

Reported here are collated clinical data from 2014–15 about the care of people with COPD in primary care in England.

Data source details

This data review used the following four sources.

1. **Quality and Outcomes Framework (QOF) (England) 2014–15¹⁸** (sourced from <http://content.digital.nhs.uk/catalogue/PUB18887>)

There are five questions reported here (COPD 002/003/004/005/007), as they were required through QOF in 2014–15. QOF indicators are chosen after a robust process based on evidence and expert opinion, which takes into account clinical and cost effectiveness.

Each country in the UK has its own version of QOF, so direct comparison between countries may not be possible.

Interpreting ‘exception reporting’ for QOF

The QOF questions provide a result for the ‘eligible’ population and this is not always the entire COPD register. Practices can exclude a patient for an indicator either because the patient declines to take part in the test or measure or because it would be inappropriate or not possible to include them within the time frame when that indicator should be recorded.

The exception rates (ie the proportion of the COPD register that was considered to be eligible or ineligible for each question) are presented beneath each relevant bar chart. Please note that the final denominator for the QOF question only includes those who were not ‘exception reported’.

It is important to look for variation between providers in terms of how many of their patients with COPD are exception reported. Practices with higher levels of ‘exception reported’ patients need to examine whether they are providing sufficient care to the patients with the most acute COPD.

2. **PHE’s tobacco control profiles⁶ and Interactive Health Atlas of Lung conditions in England (INHALE)⁷** (sourced from www.gov.uk/government/collections/local-tobacco-control-profiles-for-england and <http://fingertips.phe.org.uk/profile/inhale>)

3. **Primary care audit for Wales 2014–15**

Data from two sources were used to produce this report. The first source was the published QOF for Wales, which is detailed at the following website: <http://gov.wales/statistics-and-research/general-medical-services-contract/?lang=en>.⁵ The second source was an extract from participating Welsh GPs. Data from each participating GP were provided to NHS Digital in ‘comma separated value’ files (a simple format that stores tabular data in plain text), which were processed to create the report. Patients who had previously advised their GP practice that they wanted to opt out of data sharing with organisations beyond the practice and were coded as such have not been included in this audit.

The RCP obtained an exemption under section 251 of the NHS Act 2016 (CAG 8-6(b)/2013) from the Health Research Authority’s Confidentiality Advisory Group (CAG), to allow NHS Digital to collect and process confidential patient data without explicit consent from individual patients. More detail on the audit’s information governance arrangements can be found in the appendices of the report on the primary care audit for Wales.⁸

4. **Pulmonary rehabilitation audit for England and Wales 2015.** This was sourced from the reports *Pulmonary Rehabilitation: Time to breathe better* and *Pulmonary Rehabilitation: Steps to breathe better*.^{12,13}

Key findings

Section 1: Demographics and characteristics of people with COPD in England

Basic demographic data were reported in the 2014–15 Welsh report. The mean and median average age of the Welsh cohort of people with COPD was 71 years, with the youngest patient aged 36 years. Of the audited population, 53% were male and 47% were female.⁸ The pulmonary rehabilitation report for England and Wales in 2015 showed that COPD is a disease of low socioeconomic status, with 48% of the COPD audit sample living in postcode areas within the two ‘most deprived’ quintiles according to the Index of Multiple Deprivation (IMD) compared with only 15% who lived in areas within the ‘least deprived’ national quintile.¹³

We were unable to source any demographic data directly from primary care in England, so it is not possible to say whether these factors impact on the quality of care people receive or on the speed or appropriateness of their diagnosis. Any future audits using data from primary care must collect relevant data in order to identify factors that cause inequity in outcomes.

Section 2: Accurate and early diagnosis

Prevalence of COPD 2014–15

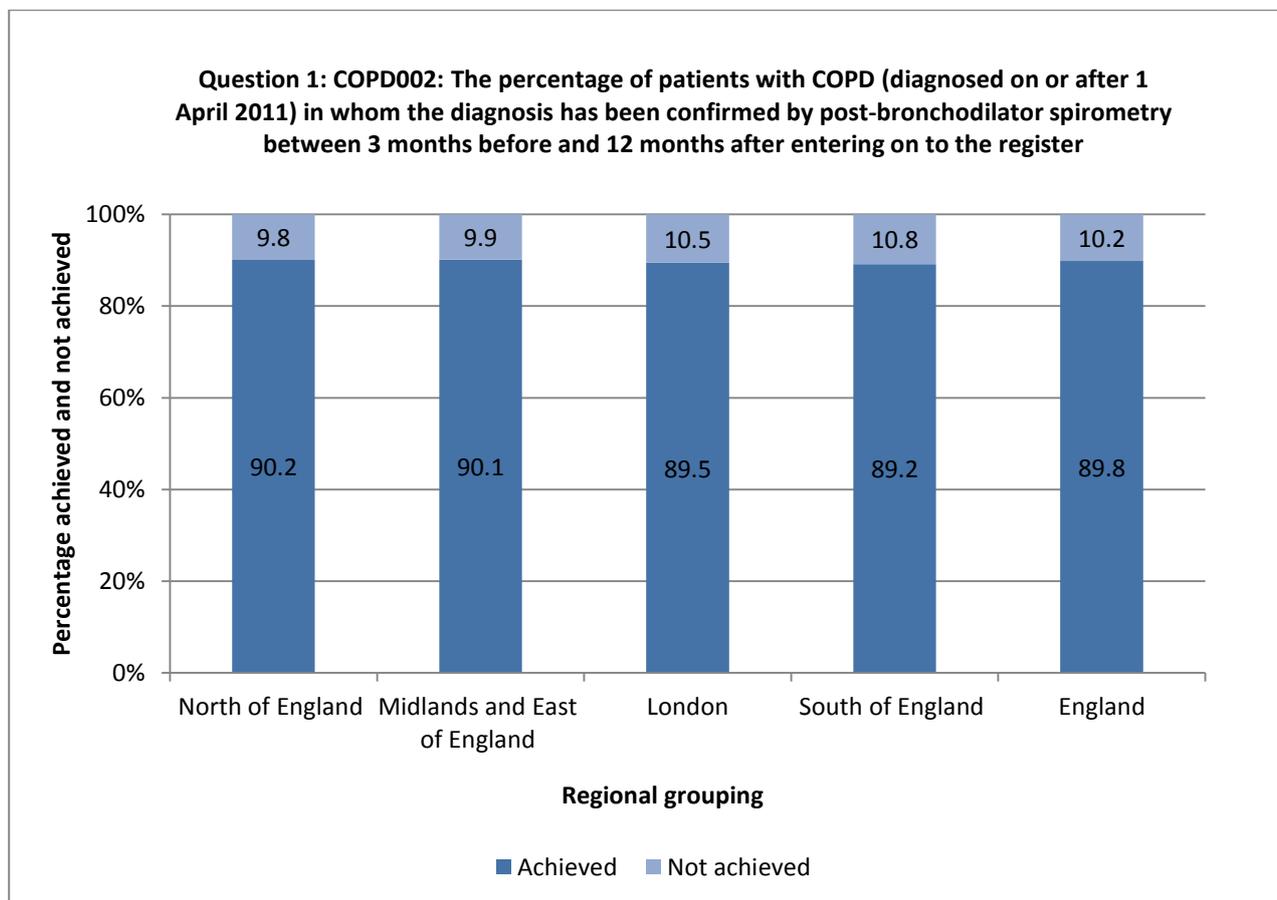
According to QOF, the prevalence of diagnosed COPD in England in 2014–15 was 1.82%, which equates to approximately 1,034,578 people.¹² Although some variation in prevalence is expected according to the age and socioeconomic status of the local population, PHE’s INHALE tool (<http://fingertips.phe.org.uk/inhale>), which allows key indicators from CCGs to be mapped and examined in more detail, shows that potentially unwarranted variation exists.⁷

Question 1: QOF COPD002. The percentage of all patients with COPD (diagnosed on or after 1 April 2011) in whom the diagnosis has been confirmed by post-bronchodilator spirometry between 3 months before and 12 months after entering on to the register

Rationale: A summary of the definition of COPD in NICE clinical guideline 101 (CG101) is as follows.

- Airflow obstruction is defined as a reduced FEV₁/FVC ratio (where FEV₁ is forced expired volume in 1 second and FVC is forced vital capacity), such that FEV₁/FVC ratio is <0.7.
- If predicated normal FEV₁ is greater than or equal to 80%, a diagnosis of COPD should be made only in the presence of respiratory symptoms such as breathlessness or cough.³

A diagnosis of COPD relies on clinical judgement based on a combination of history, physical examination and confirmation of the presence of airflow obstruction using spirometry. NICE clinical guideline (CG101) specifies that post-bronchodilator spirometry should be used to diagnose and grade the severity of airways obstruction. Failure to use post-bronchodilator readings has been shown to overestimate the prevalence of COPD by 25%.¹⁹ Spirometry should be performed after administration of an adequate dose of an inhaled bronchodilator (eg 400 mcg salbutamol).



Exception rate for question 1		
Regional grouping	Included	Excluded
North of England	90.3%	9.7%
Midlands and East of England	90.0%	10.0%
London	91.7%	8.3%
South of England	89.9%	10.1%
England	90.2%	9.8%

KEY FINDINGS

- Data for QOF in England show that spirometry was used to confirm the diagnosis in approximately 90% of people with COPD (of those not exception reported). Almost 10% of patients on the COPD register were exception reported for spirometry.
- Spirometry was used to confirm diagnosis in a similar proportion of patients in the Welsh QOF data for the same year (90.4%); however, data extracted directly from GP practices using Read codes was less reassuring. These data showed that only 19.7% of people on the COPD register in Wales had an electronic record of post-bronchodilator FEV₁/FVC ratio. Where people on the COPD register did have this test recorded, 26.9% had a value that was not consistent with COPD. Therefore, the data extraction from Wales provided confidence in the quality of COPD diagnosis for only 14.4% of people on the COPD register ((19.7% with a code for post-bronchodilator FEV₁/FVC ratio) × (73.1% with a post-bronchodilator FEV₁/FVC ratio <0.7)).
- In Wales, 63.2% of people diagnosed with COPD had a chest X-ray performed around the time of diagnosis.

AREAS IDENTIFIED AS NEEDING IMPROVEMENT OR WHERE THINGS ARE GOING WELL

- System leaders should look for unwarranted variation in expected and observed prevalence of COPD at the practice and CCG levels. Where there are differences, the factors that prevent people from receiving a diagnosis supported by spirometry should be identified. In instances

where people are unable to have diagnosis supported by spirometry, consider whether an alternative test has been performed.

- Practices and CCGs should review their registers and consider whether there is sufficient evidence for all patients to be on the COPD register. Those who have an FEV₁/FVC or VC ratio of >0.7 should be reassessed for an alternative cause of symptoms.
- The QOF results for England suggest that diagnosis needs to be confirmed in only a minority of cases. However, the learning from Wales suggests that there is a need to review registers to explore the discrepancies between QOF and practice data in order to ascertain whether more patients may actually require diagnostic confirmation of COPD.

QUALITY IMPROVEMENT

- It is understood that not all patients can perform spirometry tests. In addition, people may have equivocal results that need to be confirmed through computerised tomography (CT) or gas exchange tests in a lung physiology unit. A 100% result would, therefore, not be expected for this spirometric confirmation indicator, but patients and commissioners should feel confident that they or their populations have had a recognised diagnostic test completed by a trained and competent individual who can then make a decision on the result.
- Quality spirometry could be delivered through a number of models. For example, spirometry testing and interpretation delivered at a scale greater than individual practices could be effective in situations where resourcing does not allow assurance about quality at every practice.
- The primary care audit group would ask that providers and commissioners aspire to ensure that all patients who have COPD can 'know their number' if they want to; ie the number that tells them they have COPD (FEV₁/VC or FVC ratio) and the degree of their airways obstruction (predicted FEV₁ percentage score).
- Decision-support tools that link with primary care information technology (IT) systems could ensure that all elements of a suspected COPD assessment – such as chest X-ray – are considered and (if ordered or tested) are automatically coded within notes so that their presence or absence is visible to patients and their health professionals.

RESOURCES

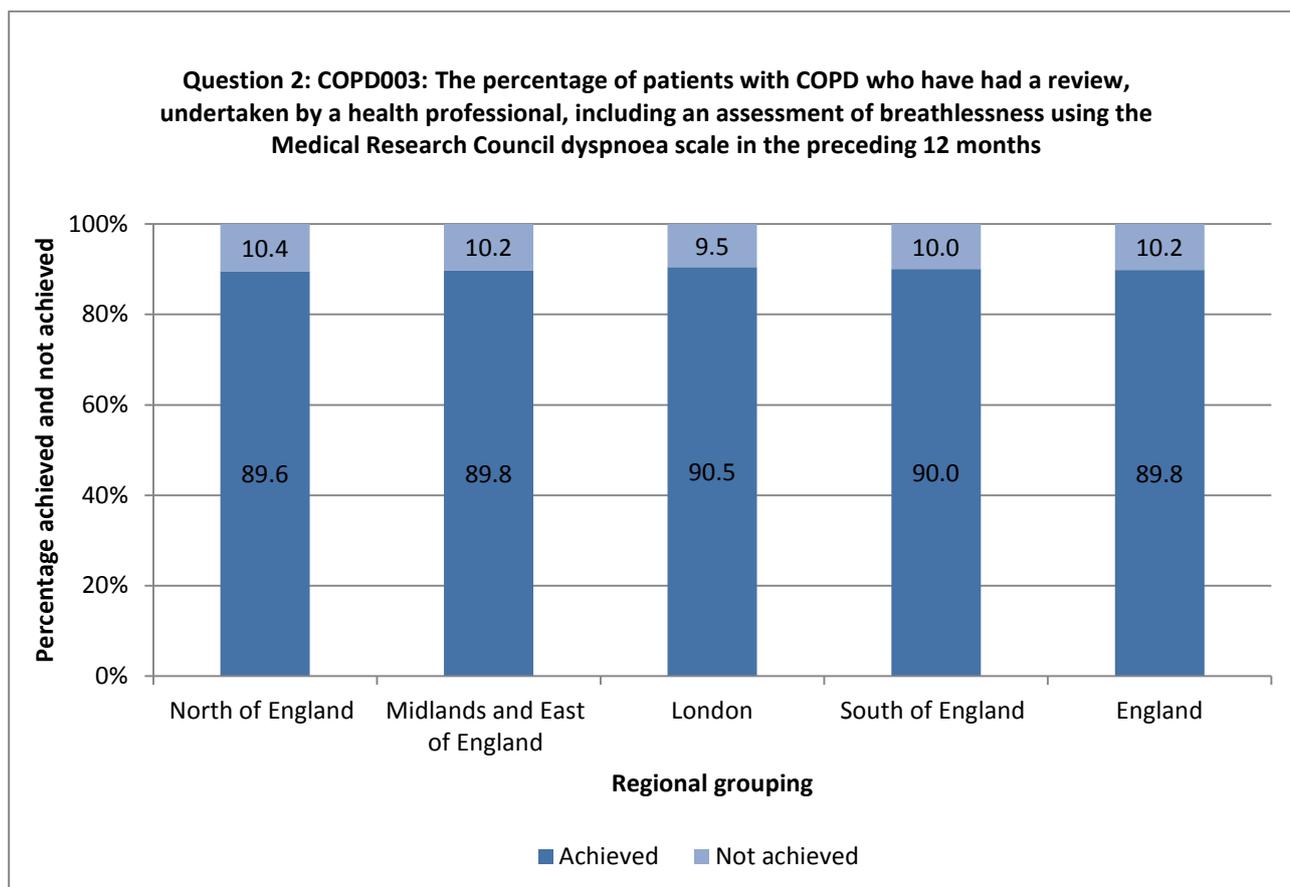
- Primary Care Commissioning. *A guide to performing quality assured diagnostic spirometry*. Leeds: PCC, 2013. www.pcc-cic.org.uk/sites/default/files/articles/attachments/spirometry_e-guide_1-5-13_0.pdf
- Primary Care Respiratory Society UK. *Diagnosis and management of COPD in primary care: A guide for those working in primary care*. Sutton Coldfield: PCRS-UK, 2016. www.pcrs-uk.org/resource/Guidelines-and-guidance/QGCOPD

Section 3: Annual review and severity assessment

Question 2: QOF COPD003. The percentage of patients with COPD who have had a review, undertaken by a health professional, including an assessment of breathlessness using the Medical Research Council dyspnoea scale in the preceding 12 months

Rationale: COPD is increasingly recognised as a treatable disease with large improvements in symptoms, health status, exacerbation rates and even mortality, if managed appropriately. Appropriate management is based on NICE CG101.³ In making assessments of the patient's condition as part of an annual review and when considering management changes, it is essential that health professionals are aware of a number of factors, including:

- MRC breathlessness grade
- degree of airways obstruction
- smoking status
- number of exacerbations in the last year.

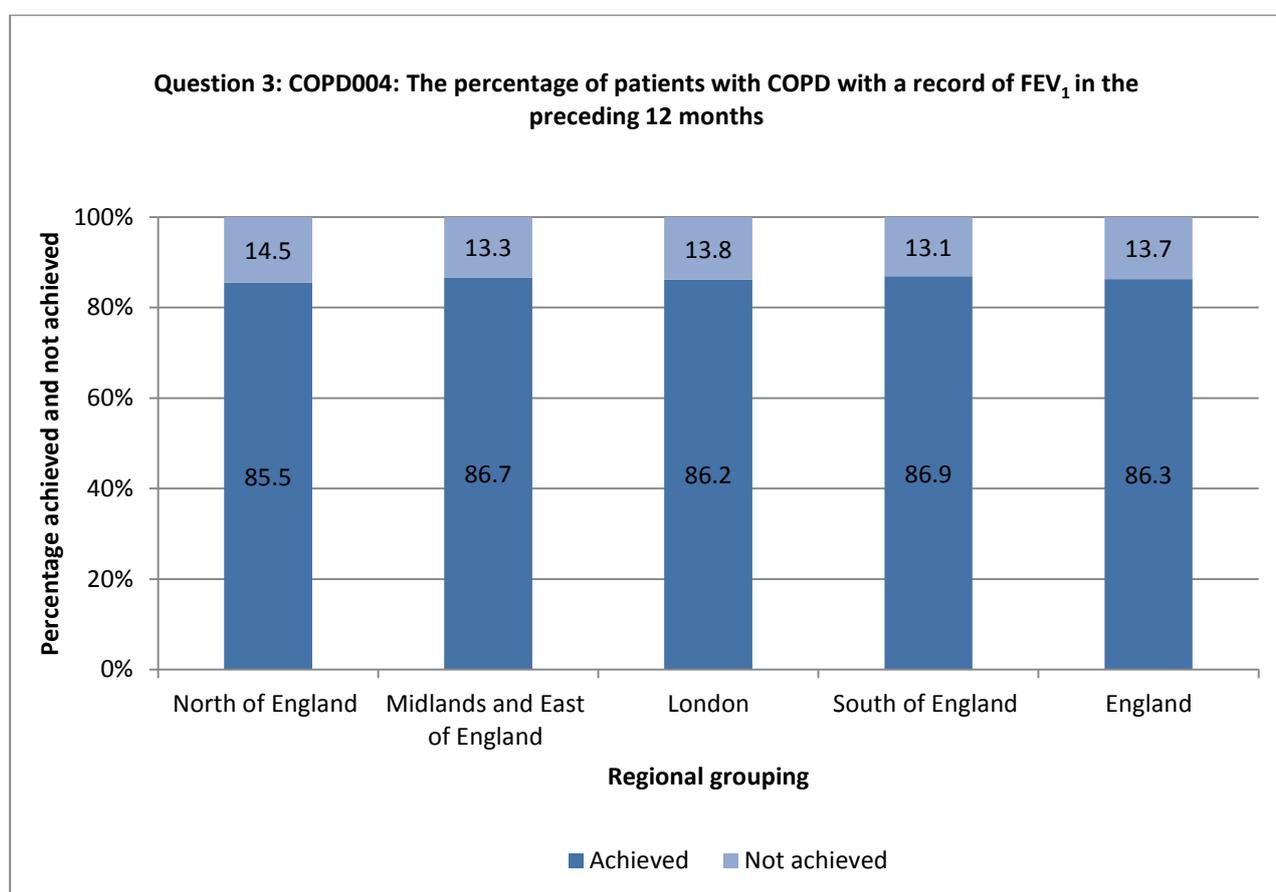


Exception rate for question 2		
Regional grouping	Included	Excluded
North of England	89.3%	10.7%
Midlands and East of England	88.5%	11.5%
London	92.1%	7.9%
South of England	87.4%	12.6%
England	88.9%	11.1%

Question 3: QOF COPD004. The percentage of patients with COPD with a record of FEV₁ in the preceding 12 months

Rationale: Lung function gradually deteriorates in patients with COPD, and this deterioration accelerates over time. Important interventions can improve quality of life in patients with severe COPD. It is, therefore, important to monitor respiratory function in order to identify patients who might benefit from referral for more intensive treatments (such as pulmonary rehabilitation or continuous oxygen therapy) or diagnostic review.

NICE CG101³ recommends that FEV₁ and inhaler technique should be assessed at least annually for people with mild/moderate/severe COPD (and at least twice a year for people with very severe COPD).

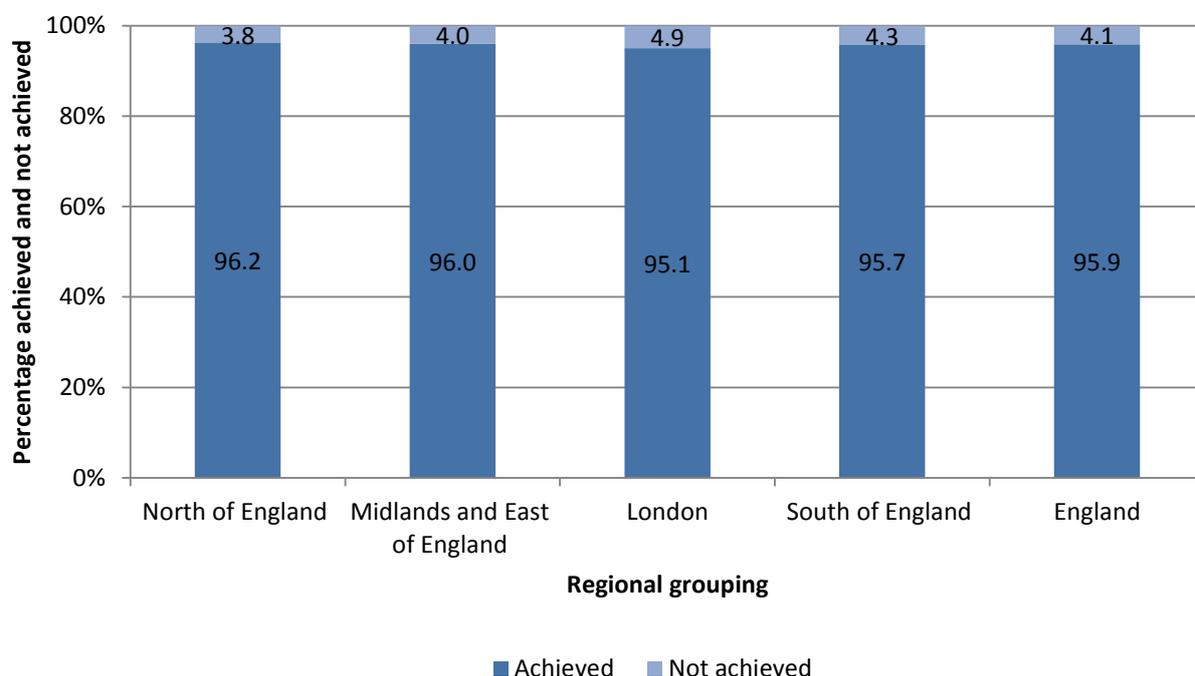


Exception rate for question 3		
Regional grouping	Included	Excluded
North of England	83.3%	16.7%
Midlands and East of England	85.1%	14.9%
London	90.6%	9.4%
South of England	87.7%	15.3%
England	84.9%	15.1%

Question 4: QOF COPD005. The percentage of patients with COPD and Medical Research Council dyspnoea grade ≥ 3 at any time in the preceding 12 months, with a record of oxygen saturation value within the preceding 12 months

Rationale: COPD is increasingly recognised as a treatable disease with large improvements in symptoms, health status, exacerbation rates and even mortality if managed appropriately. People with persistently low oxygen saturation (<92%) when their disease is stable should be referred to a specialist oxygen service.²

Question 4: COPD005: The percentage of patients with COPD and Medical Research Council dyspnoea grade ≥ 3 at any time in the preceding 12 months, with a record of oxygen saturation value within the preceding 12 months



Exception rate for question 4

Regional grouping	Included	Excluded
North of England	98.7%	1.3%
Midlands and East of England	98.4%	1.6%
London	98.5%	1.5%
South of England	98.4%	1.6%
England	98.5%	1.5%

KEY FINDINGS

- In total, 10.2% of people with COPD were exception reported for review, and a further 11.1% did not get a review despite being 'eligible' (question 2).
- Overall, 15.1% of patients were exception reported for the FEV₁ measure, and a further 13.7% did not have the test despite being 'eligible' (question 3).
- There is no further data available in England for 2014–15 that records the other essential items of a review, such as assessment of breathlessness, tobacco dependency and number of exacerbations in the past year.
- Learnings from the Welsh GP extracted data:⁸
 - Tobacco: current smoking status was recorded for 71.7% of people with COPD in Wales between 1 April 2014 and 31 March 2015.
 - Breathlessness: an MRC grade was recorded for 58.2% of people with COPD in Wales between 1 April 2014 and 31 March 2015.
 - Exacerbations: 10.8% of people with COPD in Wales had at least one exacerbation recorded between 1 April 2014 and 31 March 2015.

AREAS IDENTIFIED AS NEEDING IMPROVEMENT OR WHERE THINGS ARE GOING WELL

- Pulse oximetry is now being performed almost universally in breathless people with COPD (question 4).

QUALITY IMPROVEMENT

- Look at systems used by the practice to ensure patients attend annual reviews, especially when monitoring repeat prescriptions.
- If this is a CCG- or region-wide problem, does the whole system need to consider whether a service review is required to reach those who are not being seen? Is there a template to ensure that everyone records COPD care in the same way?
- Where it appears there is variation between practices, could additional measures or resource be used or allocated in those practices where review numbers are lower to improve attendance (for example, reminder letters, texts, or telephone reminders the day before)?
- People with COPD should be asked about their breathlessness using the MRC scale,²⁰ because those with higher grades have more serious disease and, consequently, need more intensive monitoring and therapies (eg pulmonary rehabilitation).³
- Breathlessness is a cardinal symptom of COPD, but people with COPD are at higher risk of developing other long-term conditions that also cause breathlessness, such as heart failure and lung cancer.²¹ Practices should consider implementing a structured annual breathlessness assessment to ensure that other causes of breathlessness are being considered at annual review.
- Long-term oxygen therapy prolongs and improves life for people with COPD who have chronic hypoxia.³ Are patients identified as having long-term hypoxia (persistent SpO₂ <92%) when stable being referred for assessment by a specialist oxygen team?
- Only 20% of people with COPD do not have another long-term condition.¹⁹ Patients who are not getting reviewed may also not be receiving optimal care for their other conditions. For those with multi-morbidity, could resource be reallocated and used to help them receive a multi-approach review from a long-term condition health professional?
- The primary care audit group acknowledges the time pressures currently inherent in primary care. Consequently, it is important to note that full diagnostic spirometry is not required annually once the diagnosis is accurately confirmed, unless the health professional thinks an additional cause of breathlessness is present and reassessment is required. Attaining an FEV₁ (in order to note change and the predicted FEV₁ percentage score) is helpful for management and can be performed on cheaper and more portable equipment such as micro spirometers, which can be used in patients' homes and take less time than full spirometry. People with considerably reduced lung volumes may need full spirometry or assessment in a lung function unit.
- Practices should help people with COPD to better engage with them by providing them with the BLF's COPD patient passport (<http://passport.blf.org.uk>) and an individualised self-management plan.

RESOURCES

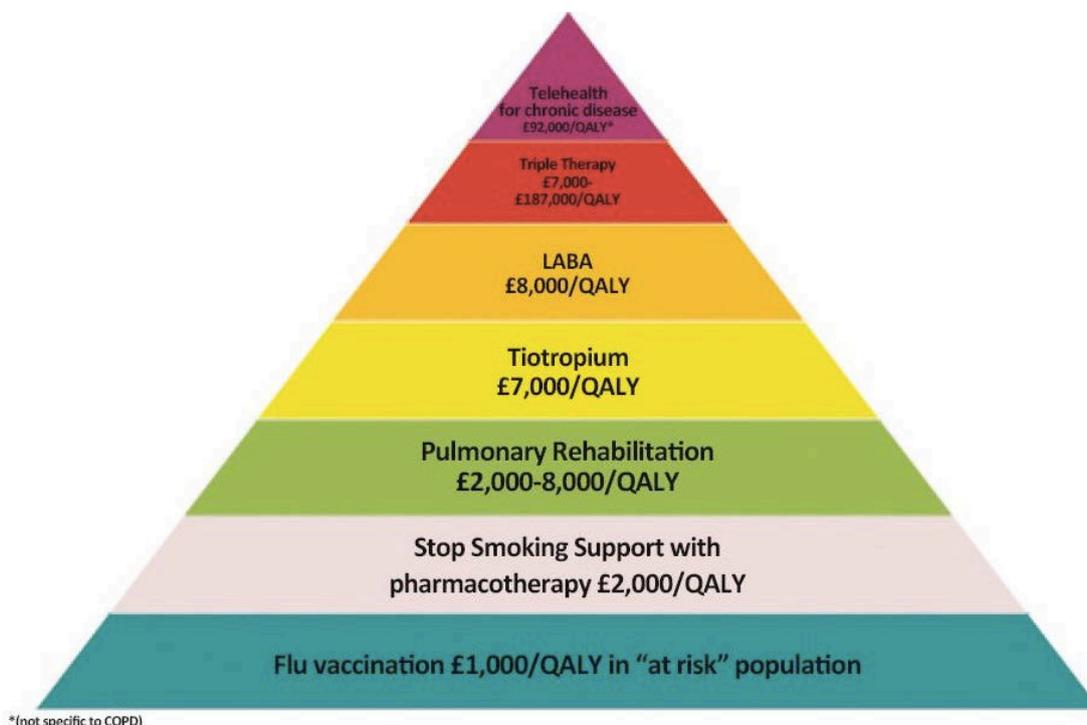
- Primary Care Respiratory Society UK. *Diagnosis and management of COPD in primary care: A guide for those working in primary care*. Sutton Coldfield: PCRS-UK, 2016. www.pcrs-uk.org/resource/Guidelines-and-guidance/QGCOPD
- British Lung Foundation. *COPD patient passport*. <http://passport.blf.org.uk> [Accessed October 2016]
- IMPRESS. Breathlessness algorithm. www.networks.nhs.uk/nhs-networks/impres-improving-and-integrating-respiratory/documents/Breathlessness%20algorithm%20IMPRESS%20LSE%20Health%20Foundation%20FINAL.pdf/view
- Primary Care Respiratory Society UK. Wall chart on home oxygen prescribing. Sutton Coldfield: PCRS-UK, 2016. www.pcrs-uk.org/wall-chart-home-oxygen-prescribing
- British Lung Foundation. *Oxygen therapy*. Patient guide. London: BLF, 2015. <http://shop.blf.org.uk/collections/lung-healthinformation/products/oxygen-booklet>

Section 4: Providing evidence-based, high-value and safe care

a. Rationale (prescribing for value)

When considering the management of COPD at the individual or population level, the choice of intervention should be made based on clinical effectiveness. However, not all interventions are equally cost-effective. The quality-adjusted life year (QALY) pyramid of value for COPD interventions (Figure 1) ranks COPD interventions (all of which are clinically effective) according to their cost effectiveness (using QALY scores). A QALY is a measure of the state of health of a person (or group) in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. QALYs are calculated by estimating the years of life remaining for a patient following a particular treatment or intervention and weighting each year with a quality-of-life score (on a 0 to 1 scale). In the UK, the NICE accepted cost-effectiveness ‘threshold’, over which treatments are less likely to be recommended for use in the NHS, is £20,000 per QALY.²² Figure 1, therefore, provides a guide for how value for patients and the healthcare system for COPD can be optimised.

Fig 1. The pyramid of value for COPD interventions

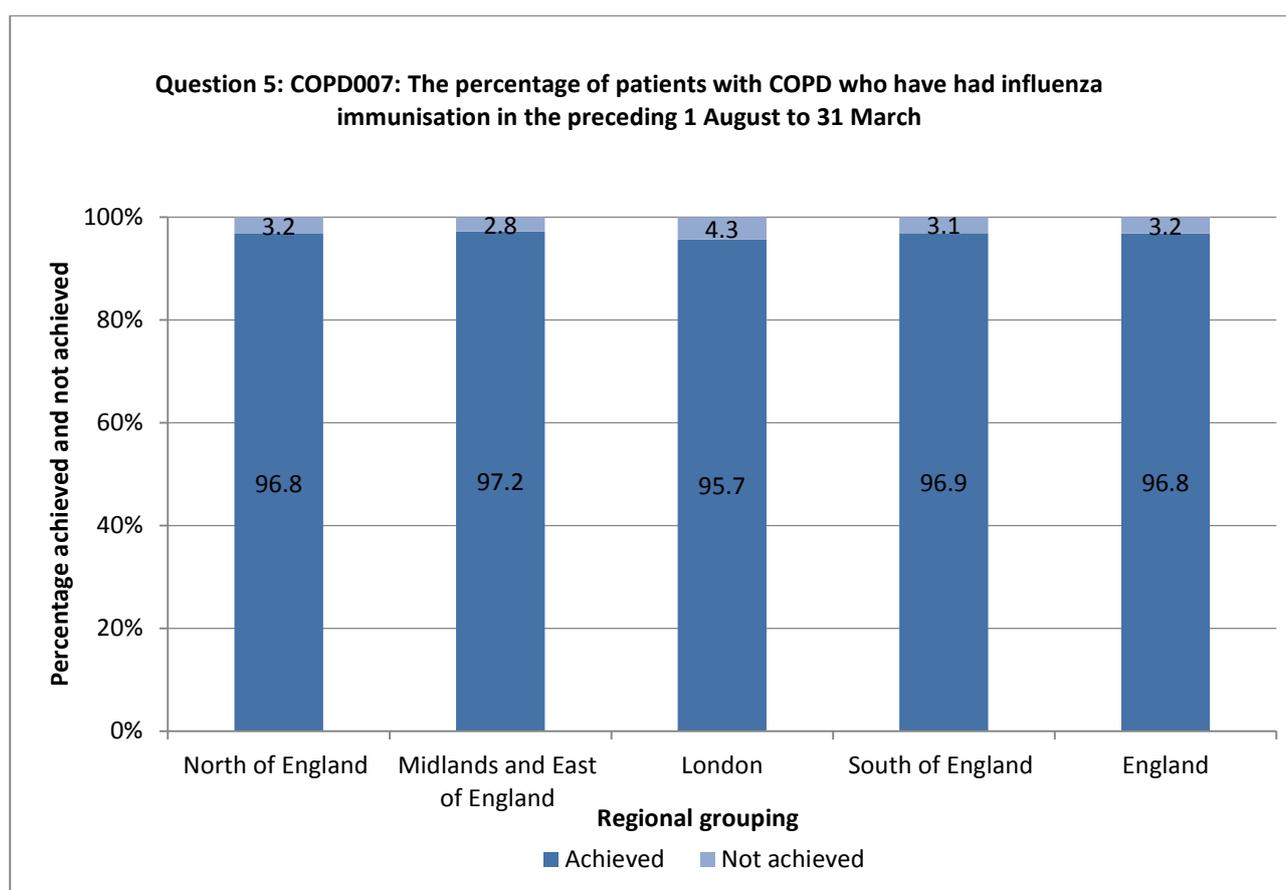


This pyramid was developed by the London Respiratory Network with the London School of Economics and Political Science (modified from the *IMPRESS guide to the relative value of COPD interventions* www.networks.nhs.uk/nhs-networks/impress-improving-and-integrating-respiratory/news/impress-guide-to-the-relative-value-of-copd-interventions).²³

b. Flu vaccination

Question 5: QOF COPD007. The percentage of patients with COPD who have had influenza immunisation in the preceding 1 August to 31 March

Rationale: This is a current recommendation from the English and Welsh departments of health, the Scottish Government and the Joint Committee on Vaccination and Immunisation (JCVI).^{24,25} People with chronic respiratory illness who are infected with the influenza virus have more serious illness and are at higher risk of mortality. The influenza vaccine has variable effectiveness, according to the season and the patient's current health status when the vaccine is given. However, the vaccine is safe and is the highest value intervention for the treatment of COPD, but it is used less than some other COPD interventions that have less value.



Exception rate for question 5		
Regional grouping	Included	Excluded
North of England	84.3%	15.7%
Midlands and East of England	83.9%	16.1%
London	83.9%	16.1%
South of England	84.5%	15.5%
England	84.2%	15.8%

c. Treating tobacco dependency

For people with COPD who smoke tobacco, cessation is accepted as the only intervention that will slow the rate of lung decline.

No publicly available data were available for England for 2014–15 regarding the prevalence of tobacco dependency in people with COPD or the extent to which smoking cessation interventions were offered to this population. Data from QOF and PHE's INHALE provide generic intelligence, some of which is presented here. Relevant data from the primary care report for Wales are also presented.

Smoking prevalence and treatment from English QOF data¹²

QOF code	Percent recorded	Number recorded	Denominator population
SMOK002: The percentage of patients with any or any combination of the following conditions: coronary heart disease (CHD), peripheral artery disease (PAD), stroke or transient ischaemic attack (TIA), hypertension, diabetes, COPD, chronic kidney disease (CKD), asthma, schizophrenia, bipolar affective disorder or other psychoses whose notes record smoking status in the preceding 12 months	93.22%	11,941,209 (people with long-term condition (LTC) who have been asked whether they smoke)	12,809,792 (England's population with LTCs)
SMOK004: The percentage of patients aged 15 or over who are recorded as current smokers who have a record of an offer of support and treatment within the preceding 24 months	85.80%	7,518,599 (smokers who have been offered smoking cessation support)	8,763,228 (England's current smokers)
SMOK005: The percentage of patients with any or any combination of the following conditions: CHD, PAD, stroke or TIA, hypertension, diabetes, COPD, CKD, asthma, schizophrenia, bipolar affective disorder or other psychoses who are recorded as current smokers who have a record of an offer of support and treatment within the preceding 12 months	94.06%	1,880,884 (people with LTC who are smokers and have been offered smoking cessation support)	1,999,749 (England's current smokers with LTC)

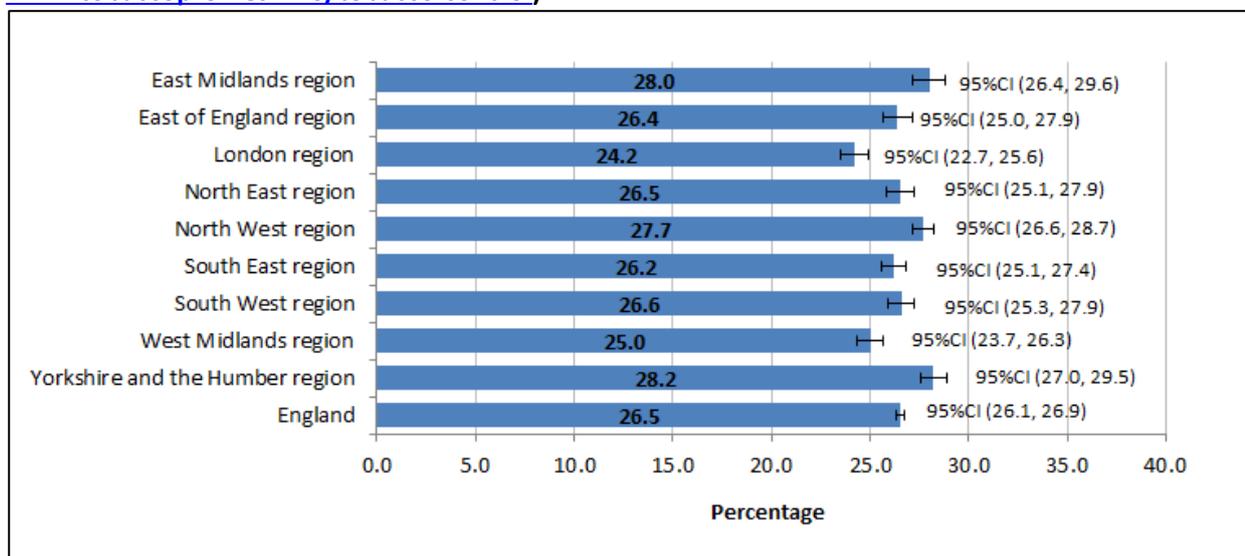
Smoking prevalence and treatment for tobacco dependency using data from the primary care audit for Wales 2014–15⁸

Question	People in Wales (%)
People with COPD where <i>last smoking code</i> indicated current tobacco smoking	33.5%
People with COPD where last smoking code indicated current tobacco smoking and <i>in the last year</i> a code was used that suggests the person has been asked and advised about smoking cessation	77.6%
People with COPD where last smoking code indicated current tobacco smoking and <i>in the last year</i> a code was used that suggests the person has been referred for smoking cessation	74.3%
People with COPD where last smoking code indicated current tobacco smoking and <i>in the last year</i> a code (prescription code or quit smoking pharmacotherapy code) was used that suggests the person received pharmacology for tobacco dependency	10.8%
People with COPD where last smoking code indicated current tobacco smoking who declined treatment for tobacco dependency <i>in the last year</i>	8.2%
People with COPD where the last smoking status code was recorded <i>within the last year</i>	71.7%

Smoking prevalence in routine and manual workers

Figure 2 shows the current smoking prevalence in routine and manual workers, a population more likely to suffer from COPD.²⁶ Although rates of smoking are reducing in England overall, there are certain groups where achieving reductions is more challenging.²⁷

Smoking prevalence in adults working in routine and manual occupations: current smokers (Source: www.tobaccoprofiles.info/tobacco-control)⁶

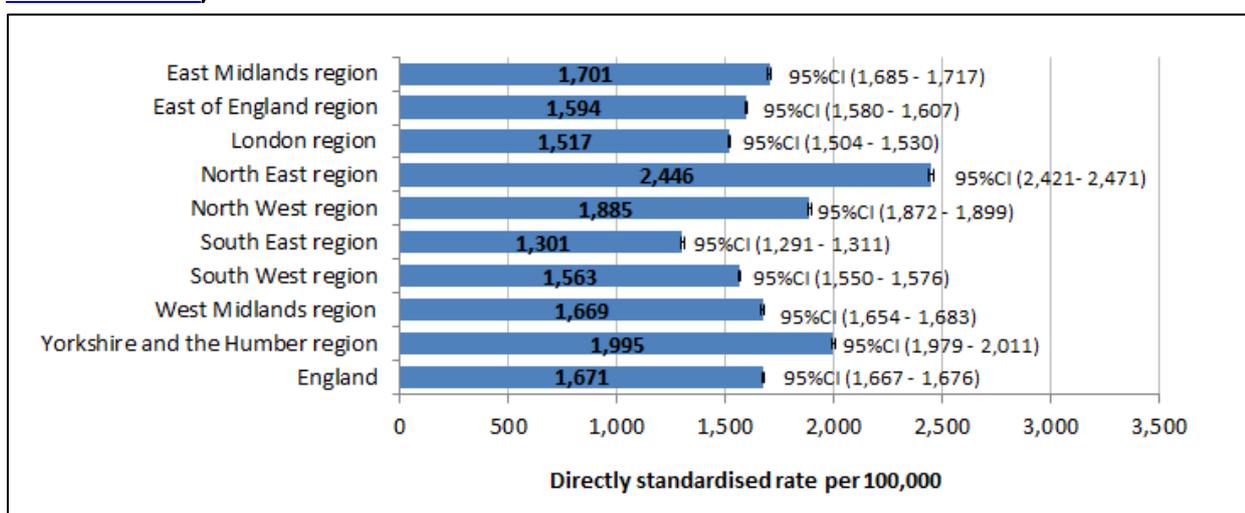


CI, confidence interval.

Hospital admissions attributable to smoking

According to the Office for National Statistics (ONS), 19% of adults in Great Britain currently smoke (20% of men and 17% of women).²⁸ This places a considerable burden on the healthcare system, with approximately half a million smoking-related admissions (4% of all hospital admissions) recorded in England in 2014–15. It is important to note that approximately 80% of cases of COPD are smoking related, and up to 25% of long-term smokers will go on to develop COPD.²⁹ Rates of hospital admissions attributable to smoking for all regions in England are shown in Figure 3.

Hospital admissions attributable to smoking in England, 2014–15 (Source: www.tobaccoprofiles.info/tobacco-control)⁶



CI, confidence interval.

d. Pulmonary rehabilitation

There is no QOF indicator to report on the referral, attendance and completion of pulmonary rehabilitation for people with COPD. However, data on pulmonary rehabilitation from the Wales primary care audit and from the pulmonary rehabilitation audit undertaken in England and Wales provide important learning for primary care in England.

Referral to pulmonary rehabilitation using data from the primary care audit for Wales, 2014–15⁸

By the end of 2014–15, 34.5% of people with MRC breathlessness grades of 3, 4 or 5 had ever been referred for pulmonary rehabilitation. This represents referrals over a decade (from when the QOF contract began in 2004). These data should be considered alongside information about availability of services.

Data from the pulmonary rehabilitation audit in 2015¹³

The 2015 clinical report from the National COPD Audit Programme's pulmonary rehabilitation audit presented its results in line with the quality standards, along with recommendations for pulmonary rehabilitation services.¹³ A sample of the results are as follows.

NICE Quality Standard 1: Referral for pulmonary rehabilitation

- a. People with COPD and self-reported exercise limitation (MRC dyspnoea grade 3–5) are offered pulmonary rehabilitation.
- b. If accepted, people referred for pulmonary rehabilitation are enrolled to commence within 3 months of receipt of referral.

- In total, 37% of patients wait longer than the minimum of 3 months (90 days) set out in the quality standards to start pulmonary rehabilitation.
- Waiting times to start pulmonary rehabilitation vary significantly between programmes. The average waiting time for cohort programmes is 1 month longer than for rolling programmes (see [the glossary](#) for definitions).
- Patients with a full range of self-reported exercise limitation were assessed and enrolled to pulmonary rehabilitation; however, the number of patients with more severe disability (MRC grade 5) was low (9%).

NICE Quality Standard 2: Pulmonary rehabilitation programmes accept and enrol patients with functional limitation due to other chronic respiratory diseases (for example bronchiectasis, interstitial lung disease (ILD) and asthma) or COPD MRC dyspnoea grade 2 if referred.

- Overall, 15% of enrolled patients were assessed as being at MRC dyspnoea grade 2.
- Enrolment of patients with other respiratory diseases was not audited.

Patient referral to pulmonary rehabilitation¹³

Question 1.9: Where was the patient referred from? (more than one response possible)		
[National audit (n=7,413)]		
Hospital consultant (or member of clinical team)	21%	1,521
Hospital specialist COPD team	11%	841
Specified post-AECOPD early PR pathway	2%	174
Community services	12%	903
GP/practice team	51%	3,810
Other*	3%	219

*Other comprised: internal referral from PR team (26 cases); referral from other specialities (14 cases); respiratory or other 86 cases); self referral (41 cases); oxygen services (11 cases), not known (41 cases).

e. Responsible respiratory prescribing (inhaled medicines and oxygen)

Inhaled bronchodilators are effective in treating breathlessness and some are effective in reducing exacerbations.³⁰ The addition of corticosteroids is beneficial for a minority of people with severe or very severe disease and in those who have frequent exacerbations. However, evidence published in recent years has raised concern about the overuse of potentially harmful inhaled corticosteroids (ICS).³

Inhaler technique is critical to COPD care. Poor technique results in a loss of clinical effectiveness.²¹

Long-term oxygen therapy is a life-prolonging intervention in people with COPD who have chronic hypoxia and do not smoke tobacco. There are no national measures of the clinical effectiveness of inhaled medicines or oxygen therapy within the English QOF.

Inhaled medicine and oxygen therapy using data from the primary care audit for Wales 2014–15⁸

In the absence of any English metrics on inhaled medicine and oxygen therapy there is some learning available from the Welsh audit, some of the results of which are presented below.

Question	People in Wales (%)
People with COPD who have a record of oxygen therapy in the last 6 months.	0.4%
People with COPD who do not have an asthma diagnosis and who have received inhaled steroids in the last 6 months of the audit without long-acting beta2 agonists (LABA)	7.2%
People with COPD and an MRC breathlessness grade of 4 who have received inhaled steroids, long-acting muscarinic antagonist (LAMA) and LABA (triple therapy) in the last 6 months	58.0%
People with COPD who have been issued inhaler therapy in the last 12 months and had a technique check within the same year	43.8%
People with COPD who have been issued inhaler therapy in the last 12 months and had a technique check ever	91.3%

KEY FINDINGS

Flu

- Overall, 15.8% of people with COPD in England were exception reported for flu vaccine in 2014–15; 96.8% of the 'eligible' group received the vaccine.

Tobacco

- Tobacco use in people with COPD is highly prevalent and under treated.

Pulmonary rehabilitation

- There is under-referral of eligible people for pulmonary rehabilitation (34.5% of people with an MRC breathlessness grade of 3, 4 or 5 had ever been referred for pulmonary rehabilitation). In addition, 11.1% of people on COPD registers in Wales did not have a breathlessness grade, which is essential when planning patient care.¹³

Responsible respiratory prescribing (inhaled medicines)

- In Wales, 43.8% of people with COPD who had been issued with inhaler therapy in the last 12 months had a technique check within the same year.

Responsible respiratory prescribing (oxygen)

- Overall, 0.4% of people on the Wales COPD register had a record of oxygen therapy in the last 6 months of the audit period.

AREAS IDENTIFIED AS NEEDING IMPROVEMENT OR WHERE THINGS ARE GOING WELL

Flu

- The flu vaccine is a high-value intervention for COPD but is currently underutilised according to QOF. It is part of the core treatment of COPD.

Tobacco

- Tobacco dependency needs to be considered as a relapsing condition and status should be recorded and help offered every year.
- NICE recommends pharmacotherapy and behavioural support to help people quit smoking.⁴ A high proportion of smokers have been referred for pharmacotherapy and behavioural support but only a small proportion receive a stop-smoking prescription and, therefore, the full therapeutic intervention as recommended by NICE.

Pulmonary rehabilitation

- GPs are responsible for 50% of referrals to pulmonary rehabilitation based on the pulmonary rehabilitation audit data.¹² Higher referral rates for this high-value intervention are critical to improving care in COPD. Primary care health professionals who are not familiar with or confident in prescribing this therapy need access to training and support.
- MRC breathlessness grades are essential to plan care, and they need to be recorded regularly to detect a change that could signal an additional cause of breathlessness.

Responsible respiratory prescribing (inhaled medicines)

- Better inhaler technique, appropriate choice of inhaled medicines and recording of oxygen use in primary care notes needs to improve.
- Regular review of a care plan should include a check on adherence and technique with inhaled therapies, as underuse and misuse are common, and regular checks ensure that the right devices are being used and that any errors in technique can be corrected.

QUALITY IMPROVEMENT

Flu

- Do systems support primary care recording of the flu vaccines given elsewhere, eg in a pharmacy?
- Where variation exists between practices or CCGs, is there a difference in implementation of the national flu campaign?
- Do health professionals show leadership in relation to the flu vaccine by having it themselves?

Tobacco

- Health professionals should receive training that enables them to feel confident to have the right conversation about tobacco smoking and that empowers them to feel effective in helping someone quit smoking.
- Training is available for primary care health professionals to provide a short evidence-based intervention lasting 30 seconds that can help to elicit behaviour change. Health professionals who care for people with COPD should have this training.
- Consider using an exhaled carbon monoxide (CO) monitor at each review. This can motivate people to quit and can reassure and encourage them when CO values fall.
- Accessing a stop-smoking service increases the chances of quitting smoking. The system should ensure that there is adequate provision of services so that when primary care refers motivated patients there is an accessible and responsive service.
- Primary care prescribers should encourage the use of pharmacotherapy to help people quit and ensure that they have sufficient knowledge of the available nicotine replacement devices and modes of delivery so that they can be supportive of advice provided by stop-smoking specialists.
- People with current or past mental health problems should be offered varenicline as part of a quit-smoking attempt and they should be advised that it is safe. They require close monitoring and are at higher risk of relapse, so regular review and motivational support is required.

Pulmonary rehabilitation

- Variation in referral between practices and CCGs should be reviewed and conversations with referrers, patients and patient charities should aim to understand the reasons for this.
- For those who are unwilling or unable to attend PR, consider providing appropriate information regarding the importance of physical activity. Local healthcare providers/commissioners need to actively explore interventions that would enhance referral and uptake of pulmonary rehabilitation. This requires a culture change at referrer level and adequate provision of accessible services.

Responsible respiratory prescribing (inhaled medicines)

- Review how MRC breathlessness grades are recorded. Can grades of function in relation to breathlessness be completed by patients prior to their review to save time and encourage engagement and self-care?
- The primary care workstream are aware of successful improvement projects that have reduced the use of inhaled steroids in people with COPD. CCGs that are not already looking at respiratory prescribing as part of quality improvement projects are likely to make potential savings if they begin to do so.
- System leaders, including pharmacists, should review their local data around ICS prescribing in order to understand where guidelines do not appear to be in use and whether people with COPD are receiving optimal inhaler therapy.
- People with COPD who are on long-term inhaled steroids of greater than 1,000 mcg beclometasone dipropionate (BDP) equivalent per day should be reviewed as a priority and provided with a steroid safety card (as advised by the Medicines and Healthcare Products Regulatory Agency (MHRA)) if a decision is made that the indication and dose are appropriate.
- People on inhaled steroids outside of the indication should be reviewed and stepped down; this could be with the support of a respiratory pharmacist. Potential harms that are associated with long-term inhaled steroid use include increased risk of pneumonia and, with higher doses, adrenal suppression. Local guidelines or support from specialists should be available to address concerns that primary care health professionals may have about reducing inhaled steroids in people who may have underlying asthma.
- Health professionals should receive up-to-date training on the use of inhaler devices. Many new devices have emerged in recent years, and evidence suggests a lack of confidence and skill among health professionals in primary and secondary care when teaching patients to use new devices.
- A standard template and decision-support software linked with IT systems could encourage inhaler technique checking and training.

Responsible respiratory prescribing (oxygen)

- Oxygen should be recorded as a repeat prescription (although it is not authorised for issue with prescription form FP10) and should be included in the annual prescribing review, as would be done for other drugs on the repeat prescribing list. As this is a specialist prescription, GPs need to ensure that a home oxygen review service has been offered each year as a minimum, to ensure safety and clinical effectiveness.
- Any patient with COPD who is prescribed oxygen prior to a home oxygen assessment and review service being available should be reassessed and referred.
- Patients who use oxygen and smoke or live in households with smokers should be prioritised for review and offered quit smoking therapy to ensure clinical effectiveness of the therapy and to avoid fire-related harm to themselves and those around them.

RESOURCES

- IMPRESS. *Guide to the relative value of COPD interventions*. www.networks.nhs.uk/nhs-networks/impress-improving-and-integrating-respiratory/news/impress-guide-to-the-relative-value-of-copd-interventions [Accessed October 2016]
- Hopkinson N, Williams S. *Flu vaccination protects you, your family and your patients – still time to make a difference. Influenza vaccine for health professionals: information sheet*. London: London Respiratory Network, 2015. www.networks.nhs.uk/nhs-networks/london-lungs/documents/flu-vaccination-protects-you-your-family-and-your-patients-still-time-to-make-a-difference/file_popview
- National Centre for Smoking Cessation and Training. *A short training module on how to deliver very brief advice on smoking*. Dorchester: NCSCT. www.ncsct.co.uk/publication_very-brief-advice.php [Accessed October 2016]
- London Clinical Senate. *Helping smokers quit: the expired Carbon Monoxide (CO) test – guidance for health professionals*. www.londonsenate.nhs.uk/wp-content/uploads/2015/04/Helping-Smokers-Quit-Programme-The-expired-carbon-monoxide-CO-test.pdf [Accessed October 2016]

- London Clinical Senate. *Helping smokers quit: Why and how to prescribe varenicline in hospital*. Advice on prescribing varenicline for unwell smokers. www.londonsenate.nhs.uk/wp-content/uploads/2016/01/Why-and-how-to-prescribe-varenicline-in-hospitals.pdf [Accessed October 2016]
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- National COPD Audit Programme: pulmonary rehabilitation workstream. www.rcplondon.ac.uk/projects/national-copd-audit-programme-pulmonary-rehabilitation-workstream [Accessed October 2016]
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- British Thoracic Society. *The case for change: Why dedicated, comprehensive and sustainable stop smoking services are necessary for hospitals*. London: BTS, 2013. www.brit-thoracic.org.uk/document-library/clinical-information/smoking-cessation/bts-case-for-change/ [Accessed October 2016]
- London Respiratory Team. *Inhaled corticosteroids in adults: prescribing guidance for healthcare professionals*. Inhaled steroid safety card and prescriber guideline. London: London Respiratory Network. www.networks.nhs.uk/nhs-networks/london-respiratory-network/key-documents/responsible-respiratory-prescribing/LRT%20Inhaled%20steroid%20clinician%20guidance.pdf [Accessed October 2016]
- PCRS-UK table of inhaled drugs. www.pcrs-uk.org/resource/Guidelines-and-guidance/table-inhaled-drugs [Accessed October 2016]

Quality improvement resources

The National COPD Audit Programme has collated a range of materials to assist with local improvement work. A selection of these is listed below, and further resources will be available on our website (www.rcplondon.ac.uk/copd) in due course.

National Institute for Health and Care Excellence (NICE)

- *Chronic obstructive pulmonary disease in adults*. Quality Standard 10 (QS10). London: NICE, 2016. www.nice.org.uk/guidance/qs10
- *Smoking: Supporting people to stop*. Quality Standard 43 (QS43). London: NICE, 2013. www.nice.org.uk/guidance/qs43
- *Chronic Obstructive Pulmonary Disease in over 16s: diagnosis and management*. Clinical Guideline 101 (CG101). London: NICE, 2010 www.nice.org.uk/guidance/CG101 (and a good summary of recommendations is found at www.nice.org.uk/guidance/cg101/chapter/guidance)

British Lung Foundation (BLF)

The BLF website (www.blf.org.uk) has a lot of patient information and also some useful tools, including the COPD patient passport (<http://shop.blf.org.uk/products/copd-passport>), the patient guide to oxygen therapy (<http://shop.blf.org.uk/collections/lung-healthinformation/products/oxygen-booklet>) and the patient guide to exercising with a lung condition (www.blf.org.uk/Page/Exercise-with-a-lung-condition).

Primary Care Respiratory Society UK (PCRS-UK)

The PCRS-UK website (www.pcrs-uk.org) hosts a range of current educational tools and events and has a large archive of resources. Its core resources include:

- Quick guide to the diagnosis and management of COPD in primary care, 2016. <https://pcrs-uk.org/quick-guide-diagnosis-and-management-copd-primary-care>
- PCRS-UK tobacco addiction and smoking cessation advice, 2016. <https://pcrs-uk.org/tobacco-dependency-0>
- PCRS-UK wall chart on home oxygen prescribing, 2016. <https://pcrs-uk.org/wall-chart-home-oxygen-prescribing>
- PCRS-UK management of stable COPD in adults. https://pcrs-uk.org/sites/pcrs-uk.org/files/os13_copd_stable.pdf
- PCRS-UK table of inhaled drugs. www.pcrs-uk.org/resource/Guidelines-and-guidance/table-inhaled-drugs

Royal College of General Practitioners (RCGP)

The RCGP has produced a guide to quality improvement for general practice to support the whole primary care team on their quality improvement journey. Some of the tools will be familiar, such as clinical audit and significant event analysis; however, there are many more ways to take advantage of quality improvement to benefit patients and practices, and the guide is designed to help practices get started: www.rcgp.org.uk/clinical-and-research/our-programmes/quality-improvement.aspx

IMPRESS

IMPRESS is a collaboration between the BTS and the PCRS-UK, hosted by NHS Networks. It hosts a range of resources, including for commissioning and integrated care. For example:

- Acute breathlessness assessment. www.networks.nhs.uk/nhs-networks/impres-improving-and-integrating-respiratory/documents/Breathlessness%20algorithm%20IMPRESS%20LSE%20Health%20Foundation%20FINAL.pdf/view
- IMPRESS *Guide to the relative value of COPD interventions*. www.networks.nhs.uk/nhs-networks/impres-improving-and-integrating-respiratory/news/impres-guide-to-the-relative-value-of-copd-interventions

The site draws together evidence and experience on COPD, heart failure, anxiety, obesity and anaemia: www.networks.nhs.uk/nhs-networks/impress-improving-and-integrating-respiratory/news/impress-breathlessness-resources

British Thoracic Society (BTS)

- BTS/SIGN asthma guideline. www.brit-thoracic.org.uk/guidelines-and-quality-standards/asthma-guideline/
- BTS guidelines for home oxygen use in adults. [www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/home-oxygen-guideline-\(adults\)/bts-guidelines-for-home-oxygen-use-in-adults/](http://www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/home-oxygen-guideline-(adults)/bts-guidelines-for-home-oxygen-use-in-adults/)
- BTS recommendations for hospital smoking cessation services for commissioners and health care professionals. www.brit-thoracic.org.uk/document-library/clinical-information/smoking-cessation/bts-recommendations-for-smoking-cessation-services/
- BTS case for change: Why dedicated, comprehensive and sustainable stop smoking services are necessary for hospitals. www.brit-thoracic.org.uk/document-library/clinical-information/smoking-cessation/bts-case-for-change/

Other

- GOLD guidance on COPD. <http://goldcopd.org/gold-reports/>
- London Clinical Senate. *Helping smokers quit: The expired carbon monoxide (CO) test*. www.londonsenate.nhs.uk/wp-content/uploads/2015/04/Helping-Smokers-Quit-Programme-The-expired-carbon-monoxide-CO-test.pdf
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Appendices

Appendix A

- What is the National COPD Audit Programme?
- National COPD Audit Programme governance
- National COPD Audit Programme primary care workstream group members
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Appendix B

- Glossary of terms, definitions and abbreviations

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Appendix A

What is the National COPD Audit Programme?

The National COPD Audit Programme is a programme of work that aims to drive improvements in the quality of care and services provided for COPD patients in England and Wales. For the first time in respiratory audit, the programme is looking at COPD care across the patient pathway, both in and out of hospital, bringing together key elements from the primary, secondary and community care sectors.

There are four programme workstreams:

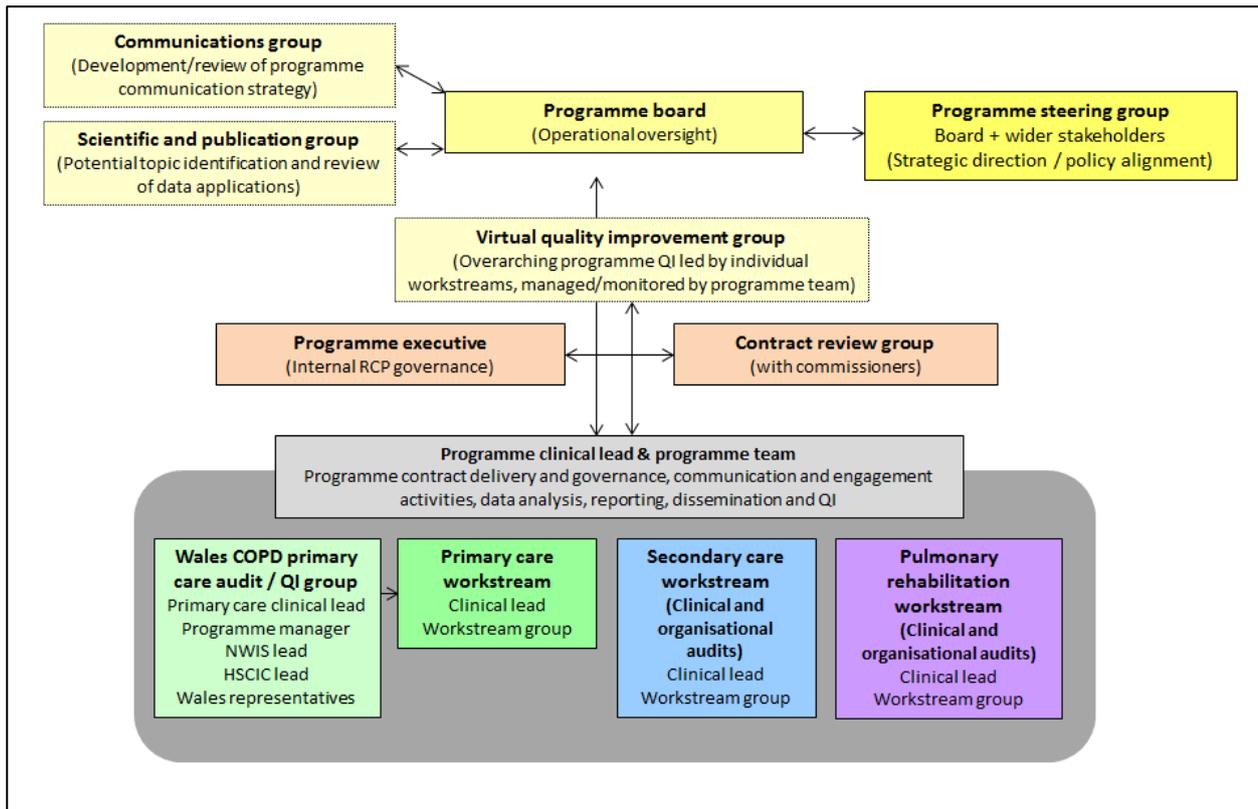
1. Primary care audit: collection of audit data from general practice patient record systems in Wales. Delivered by the RCP and NHS Digital, working with the PCRS-UK, the RCGP and the NHS Wales Informatics Service.
2. Secondary care audit: in 2014 there were snapshot audits of patients admitted to hospital with COPD exacerbation, plus organisational audits of the resourcing of COPD services in acute units. The 2014 audits were delivered by the BTS, working with the RCP. A continuous audit of admission to hospital with COPD exacerbation will commence in 2017.
3. Pulmonary rehabilitation: audits of COPD patients attending pulmonary rehabilitation (including outcomes at 180 days), plus organisational audits of the resourcing of pulmonary rehabilitation services for COPD patients. The 2015 round of this audit was delivered by the BTS, working with the RCP. Another round of snapshot clinical and organisational audits will commence in 2017.
4. Patient Reported Experience Measures (PREMs): 1-year development work exploring the potential/feasibility for PREMs to be incorporated into the programme in the future. Delivered by the BLF, working with Picker Institute Europe.

The programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA). It is included in the list of national audits for inclusion in NHS trusts' quality accounts and also the NHS Wales Clinical Audit and Outcome Review Plan.

National COPD Audit Programme governance

The National COPD Audit Programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA). The Programme is led by the Clinical Effectiveness and Evaluation Unit (CEEU) of the Royal College of Physicians (RCP), working in partnership with the British Thoracic Society (BTS), the British Lung Foundation (BLF), the Primary Care Respiratory Society UK (PCRS-UK), the Royal College of General Practitioners (RCGP) and NHS Digital.

The audit programme aims to engage all eligible services in England and Wales. It is guided by a programme board, consisting of programme delivery partners, and a wider programme steering group, comprising strategic partners and key stakeholders, including patient representation. Both groups are chaired by Professor Mike Roberts, overall clinical lead for the programme. Within the programme, each workstream is led by a dedicated clinical lead and workstream advisory group.

Fig 4. National COPD Audit Programme governance structure (updated May 2016)

Any enquiries in relation to the National COPD Audit Programme should be directed to COPD@rcplondon.ac.uk.

National COPD Audit Programme primary care workstream group members

- Ms Emma Adams, Clinical Audit Project Lead, Clinical Audit Support Unit (CASU), NHS Digital (group member until December 2014)
- Dr Noel Baxter, Primary Care Workstream Clinical Lead, National COPD Audit Programme (from October 2015); and GP Clinical Lead, NHS Southwark CCG
- Ruth Cater, Practice Manager, Staffa Health, Derbyshire (group member from April 2015)
- Rachael Dix, Practice Development Team Manager, NHS Hardwick CCG (group member until January 2015)
- Mr James Duffy, Clinical Audit Manager, Clinical Audit Support Unit (CASU), NHS Digital (group member from January 2015 to April 2016)
- Hannah Evans, Medical Statistician, Royal College of Physicians (RCP) (group member until December 2014)
- Dr Kevin Gruffydd-Jones, Respiratory Clinical Lead, Royal College of General Practitioners (RCGP); Honorary Lecturer at University of Bath; and General Practitioner
- Ms Sally Harris, Practice Nurse, Ravenswood Medical Practice, Ipswich, Suffolk (group member until April 2016)
- Ms Juliana Holzhauer-Barrie, National COPD Audit Programme Project Manager, Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP)
- Mr Joe Hunt, NHS Wales Informatics Service Lead (Deputy) (group member from May 2016)
- Ms Hamdi Issa, National COPD Audit Programme Coordinator, Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP) (group member from April 2016 to September 2016)

- Dr Rupert Jones, Executive and Research Lead, Primary Care Respiratory Society UK (PCRS-UK); Senior Clinical Research Fellow, Centre for Clinical Trials and Population Research, Plymouth University Peninsula School of Medicine and Dentistry; General Practitioner; and Primary Care Workstream Clinical Lead, National COPD Audit Programme (until September 2015)
- Dr Matt Kearney, Department of Health (group member until January 2014)
- Simon Kendrick, Senior Information Analyst, Arden GEM Commissioning Support Unit (group member from February 2015)
- Ms Megan Lanigan, Programme Manager, Clinical Innovation and Research Centre (CIRC), Royal College of General Practitioners (RCGP) (group member until February 2015)
- Ms Viktoria McMillan, National COPD Audit Programme Manager (from May 2016), Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP) (group member from May 2016)
- Professor David Price, PCRS-UK, Professor of Primary Care Respiratory Medicine (group member until March 2014)
- Ms Nicola O'Reilly, Interim Programme Manager, Clinical Innovation and Research Centre (CIRC), Royal College of General Practitioners (RCGP) (group member from May 2015 to September 2015)
- Dr Imran Rafi, Chair of the Clinical Innovation and Research Centre (CIRC), Royal College of General Practitioners (RCGP); Senior Lecturer in Primary Care Education, St George's University of London; and General Practitioner
- Professor C Michael Roberts, Programme Clinical Lead, National COPD Audit Programme; and Consultant Respiratory Physician, Whipps Cross University Hospital NHS Trust, Barts Health, Barts and The London School of Medicine and Dentistry, Queen Mary University of London
- Mr Simon Scourfield, NHS Wales Informatics Service Lead (group member from May 2016)
- Dr Sarah Sibley, Consultant Chest Physician, Liverpool Heart and Chest Hospital (group member from July 2016)
- Mrs Emma Skipper, National COPD Audit Programme Manager (until April 2016), Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP) (group member until April 2016)
- Dr Roz Stanley, Clinical Audit Project Lead, Clinical Audit Support Unit (CASU), Health and Social Care Information Centre (HSCIC) (group member until September 2013)
- Dr Elizabeth Steed, Health Psychologist and Research Design Services Adviser, Queen Mary's University London (group member from July 2016)
- Ms Carol Stonham, Senior Nurse Practitioner, Minchinhampton Surgery, Gloucestershire CCG; and Nurse Lead for PCRS-UK (group member from May 2016)
- Mr Ala Uddin, Clinical Audit Project Lead, Clinical Audit Support Unit (CASU), NHS Digital (group member from September 2013 to May 2014)

National COPD Audit Programme primary care QI/Wales group members

To reflect the Wales-specific work of the primary care workstream, an additional group was convened in 2015 to provide expert direction and input to ensure that the National COPD primary care audit and the quality improvement initiatives in response to results of the audit are feasible and acceptable to clinicians providing COPD services in Wales.

Membership is as follows:

- Dr Jackie Abbey, Primary Care Respiratory Society UK (PCRS-UK) Lead
- Dr Noel Baxter, Primary Care Workstream Clinical Lead, National COPD Audit Programme (from October 2015); and GP Clinical Lead, NHS Southwark CCG
- Dr Simon Barry, Respiratory Lead for the Wales Respiratory Health Implementation Group
- Dr Claire Campbell, Royal College of General Practitioners (RCGP) Wales Lead
- Mr Joseph Carter, Head of Wales, British Lung Foundation Wales
- Shaun Chainey, Audit Lead, Major Health Conditions Policy Team, Welsh Government
- Mr Antony Davies, Welsh Government Lead (Deputy)

- Mr James Duffy, Clinical Audit Manager, Clinical Audit Support Unit (CASU), NHS Digital (group member until April 2016)
- Nicola Edmunds, Wales Manager, Royal College of General Practitioners (RCGP)
- Dr Sion Edwards, Primary Care Quality, Public Health Wales
- Dr Karen Gully, Senior Medical Officer (General Practice and Primary Care), Welsh Government
- Ms Juliana Holzhauer-Barrie, National COPD Audit Programme Project Manager, Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP)
- Mr Joe Hunt, NHS Wales Informatics Service Lead (Deputy)
- Ms Hamdi Issa, National COPD Audit Programme Coordinator, Clinical Effectiveness and Evaluation Unit (CEEU), Care Quality Improvement Department, Royal College of Physicians (RCP) (group member from April 2016 to September 2016)
- Ms Viktoria McMillan, National COPD Audit Programme Manager (from May 2016), Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP) (group member from May 2016)
- Professor C Michael Roberts, Programme Clinical Lead, National COPD Audit Programme; and Consultant Respiratory Physician, Whipps Cross University Hospital NHS Trust, Barts Health, Barts and The London School of Medicine and Dentistry, Queen Mary University of London
- Mr Simon Scourfield, NHS Wales Informatics Service Lead
- Mrs Emma Skipper, National COPD Audit Programme Manager (until April 2016), Clinical Effectiveness and Evaluation Unit, Care Quality Improvement Department, Royal College of Physicians (RCP) (group member until April 2016)

Appendix B: Glossary of terms, definitions and abbreviations

Asthma	A respiratory condition marked by attacks of spasm in the bronchi of the lungs, causing difficulty in breathing
Atrial fibrillation (AF)	A heart condition that causes an irregular and often abnormally fast heart rate
Audit	A process that measures care against set criteria, to identify where changes can be made to improve the quality of care
BDP	Beclometasone dipropionate. A steroid medication
Beta2 agonist	A medicine that opens the airways by relaxing the muscles that constrict during an asthma attack or in COPD. This medicine is usually administered in respiratory disease by an inhaler and, less frequently, by a nebuliser
Bronchodilator	A substance that dilates the bronchi and bronchioles, decreasing resistance in the respiratory airway and increasing airflow to lungs
CCG	Clinical commissioning group
Chronic obstructive pulmonary disease (COPD)	A collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease, which cause difficulties with breathing, primarily due to narrowing of the airways
CI	Confidence interval
Cohort PR programme	A pulmonary rehabilitation programme where patients all start and finish the programme at the same time
CXR	Chest X-ray
DOSE score	Dyspnoea (breathlessness), obstruction, smoking, exacerbation (DOSE) index – predictive of mortality in COPD
Dyspnoea	Also known as shortness of breath or breathlessness, is a subjective sensation of breathing discomfort
Exacerbation	A sudden worsening or ‘flare up’ of COPD symptoms (shortness of breath, quantity and colour of phlegm)
Exception reported	Patients who are excluded from QOF indicators by practices either because they decline to take part in the test or measure or because it would be inappropriate or not possible to include them within the time frame when that indicator should be recorded
FEV₁	Forced expiratory volume in 1 second
FEV₁%	FEV ₁ /FVC ratio
FP10	A form used by an NHS doctor (in the UK) to prescribe for an NHS patient
FVC	Forced vital capacity
Health board (HB)	Health boards (HBs) in Wales plan, secure and deliver healthcare services in their areas
Hypoxaemia	An abnormally low concentration of oxygen in the blood
Hypoxia	A condition in which the body or a region of the body is deprived of adequate oxygen supply
ICS	Inhaled corticosteroid
LABA	Long-acting beta2 agonist
LAMA	Long-acting muscarinic antagonist
LTOT	Long-term oxygen therapy
Mean	The mean is the average value of the data (ie the data values are added together

and then divided by the number of data items)

Median	The median is the middle point of a dataset: half of the values are below this point and half are above this point
Metric	A system or standard of measurement
MRC breathlessness (dyspnoea) grade	Medical Research Council scale – degree of breathlessness related to graded activities
Muscarinic antagonist	In respiratory disease an inhaled medicine that opens airways to help breathlessness and reduces inflammation
NICE guideline on COPD	Guidance for the care and treatment of people with COPD in the NHS in England and Wales: http://guidance.nice.org.uk/CG101 (NICE, 2010)
NICE quality standard for COPD	Defines clinical best practice within this topic area, covering the assessment, diagnosis and clinical management of COPD in adults: http://guidance.nice.org.uk/QS10 (NICE, 2011)
Non-invasive ventilation (NIV)	Breathing support provided in hospital or at home via a face mask that delivers a slightly pressurised airflow
Primary care	Local healthcare delivered by GPs, NHS walk-in centres and others, which is provided and managed by CCGs/LHBs
Pulmonary rehabilitation (PR)	A programme, typically including patient education, exercise training and advice, which is designed to improve the health of patients with chronic breathing problems including COPD
Pulse oximetry/oximeter	A test used to measure the oxygen level (oxygen saturation) of the blood
QALY	Quality-adjusted life year – a generic measure of disease burden, including both the quality and the quantity of life lived
QI	Quality improvement
QOF	Quality Outcomes Framework – a voluntary annual reward and incentive programme for all GP surgeries in England, detailing practice achievement results
QS	Quality standard
Read codes	The standard clinical terminology system used in general practice in the UK
Rolling PR programme	A continual cycle of pulmonary rehabilitation sessions, with patients joining when there is space and leaving when they complete the course
RRP	Responsible respiratory prescribing
SBOT	Short-burst oxygen therapy
Secondary care	Planned and unplanned care that is provided in hospitals
Specialist	A clinician whose practice is limited to a particular branch of medicine or surgery, especially one who is certified by a higher educational organisation
Spirometry	A test measuring lung function, specifically the amount (volume) and/or speed (flow) of air that can be inhaled and exhaled, and which is used to diagnose COPD
VC	Vital capacity

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For further information on the overall audit programme or any of the workstreams, please see our website or contact the National COPD Audit Programme team directly:

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If you would like to join our mailing list and to be kept informed of updates and developments in the National COPD Audit Programme, please send us your email address and contact details.

Commissioned by:



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