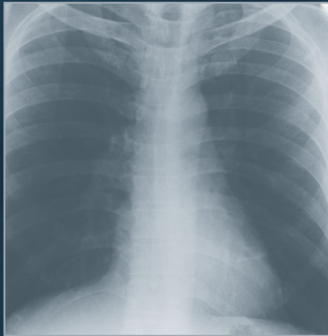


National COPD Audit Programme



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

**National organisational audit report
November 2014**

Prepared by:



**Royal College
of Physicians**



**British
Thoracic
Society**

In partnership with:



Royal College of
General Practitioners



Commissioned by:



Working in wider partnership with:



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The Royal College of Physicians

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The National COPD Audit Programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP holds the contract to manage and develop the NCA Programme, comprising more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual audits, also funded by the Health Department of the Scottish Government, DHSSPS Northern Ireland and the Channel Islands.

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Document purpose	To disseminate the results of the national COPD secondary care audit of resources and organisation of care in England and Wales 2014
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Authors	Stone RA, Holzhauser-Barrie J, Lowe D, Searle L, Skipper E, Welham S, Roberts CM (on behalf of the National COPD Audit Programme: secondary care workstream)
Publication date	November 2014
Audience	Healthcare professionals, NHS managers, chief executives and board members, service commissioners, policymakers, COPD patients, their families/carers, and the public
Description	<p>This is the first of the COPD secondary care audit reports, published as part of the National COPD Audit Programme.</p> <p>The report details national- and site-level data on the resourcing and organisation of COPD care in acute NHS units in England and Wales. It also documents attainment against relevant COPD quality standards as published by the National Institute for Health and Clinical Excellence (NICE) in 2011.</p> <p>The report is relevant to anyone with an interest in COPD. It provides a comprehensive picture of current resources and the organisation of care for COPD inpatients, 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 units but also to commissioners and policymakers.</p>
Supersedes	Previous national COPD secondary care organisational reports: www.rcplondon.ac.uk/projects/previous-copd-audits
Related publications	<ul style="list-style-type: none"> Department of Health. <i>An outcomes strategy for people with chronic obstructive pulmonary disease (COPD) and asthma in England</i>. London: DH, 2011. www.gov.uk/government/publications/an-outcomes-strategy-for-people-with-chronic-obstructive-pulmonary-disease-copd-and-asthma-in-england National Institute for Health and Clinical Excellence. <i>Chronic obstructive pulmonary disease: Management of chronic obstructive pulmonary disease in adults in primary and secondary care (partial update) (CG101)</i>. London: NICE, 2010. www.nice.org.uk/guidance/CG101 National Institute for Health and Clinical Excellence. <i>Chronic obstructive pulmonary disease quality standard (QS10)</i>. London: NICE, 2011. www.nice.org.uk/Guidance/QS10 NHS England. <i>NHS Outcomes Framework – 5 domains resources</i> [accessed September 2014]. www.england.nhs.uk/resources/resources-for-ccgs/out-frwrk/ British Thoracic Society. <i>Guideline for emergency oxygen use in adult patients</i>. London: BTS, 2008. www.brit-thoracic.org.uk/guidelines-and-quality-standards/emergency-oxygen-use-in-adult-patients-guideline/ British Thoracic Society. <i>BTS guideline on pulmonary rehabilitation in adults</i>. London: BTS, 2013. www.brit-thoracic.org.uk/guidelines-and-quality-standards/pulmonary-rehabilitation-guideline/ British Thoracic Society. <i>The use of non-invasive ventilation in the management of patients with chronic obstructive pulmonary disease admitted to hospital with acute type II respiratory failure</i>. London: BTS, 2008. www.brit-thoracic.org.uk/document-library/clinical-information/niv/niv-guidelines/the-use-of-non-invasive-ventilation-in-the-management-of-patients-with-copd-admitted-to-hospital-with-acute-type-ii-respiratory-failure/
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Report preparation

This report was written by the following, on behalf of the national COPD secondary care audit 2014 workstream group. (The full list of workstream group members is included as Appendix E.)

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We would specifically like to acknowledge the input of the following contributing members of the secondary care group: Dr Colin Gelder, Dr John Hurst, Dr Gill Lowrey, Professor Michael Steiner and Ms Catherine Thompson.

Foreword

National audits of chronic obstructive pulmonary disease (COPD) have been undertaken in 1997, 2003 and 2008, and now in 2014. The first three rounds revealed individual areas of excellence and good practice, but also notable variations in the organisation and delivery of COPD services when assessed against published standards. These variations led to the National COPD Resources and Outcomes Project (NCROP), which paired high-performing units with those achieving less well, to share learning and managerial skills in the hope that this would drive change. The variations were also one of the drivers behind the development of the National Outcomes Strategy for COPD and the NICE quality standards for COPD care.

The seismic period between 2008 and 2014 has seen publication of the National Outcomes Strategy for COPD, further NICE guidance for COPD, significant organisational change within the NHS and the launch of a new NHS plan. There has been a major drive to improve the management of medical admissions, with most acute hospitals having invested heavily in the appointment of acute physicians to bolster their admissions processes. Within the changing NHS environment, there continues to be an inexorable rise in medical admissions, including many frail and elderly patients, for whom we have the challenge of delivering evidence-based, cost-effective, patient-centred care alongside an ever-sharpening focus on budgets.

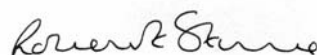
Against this backdrop, and in the knowledge that COPD has continued to form a major part of the admission workload for acute trusts, the Healthcare Quality Improvement Partnership (HQIP) commissioned the 2014 COPD audit as part of its ongoing programme of national audits. This is a hugely important development for respiratory care, and it is essential that organisations do not see the audit merely as a data collection exercise but that they instead take the findings and embed them within their improvement programmes to drive up quality.

It is a testament to the dedication and professionalism of respiratory teams across England and Wales that recruitment and participation in this audit have been so comprehensive. Asking units to undertake a major organisational survey alongside an audit of all cases of acute COPD exacerbation admitted over the busiest 3 months of the year was always going to prove challenging, and we pay tribute to colleagues across the professional spectrum who have provided data that, for the first time, will be publicly available and comparable.

We are conscious that this report presents some tough messages, but we ask you to consider two questions as you study it: firstly, is it acceptable in the 21st century that patient experience should be so variable, and that some units do not provide evidence-based care? Secondly, is it time for chief executives and clinical leads to ask: 'Does my unit provide the level of organisation and resources for COPD patients that I would be proud of if that patient were me, my friend or a member of my family?'



Professor Mike Roberts, National COPD Audit Programme Clinical Lead



Dr Robert Stone, Secondary Care Audit Workstream Clinical Lead

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Executive summary

This report presents results from the National Chronic Obstructive Pulmonary Disease (COPD) Secondary Care Audit 2014: Resources and organisation of care in acute units in England and Wales. The National COPD Audit Programme, of which this organisational audit forms a part, aims to provide a comprehensive view of COPD patient care and services across the patient pathway in England and Wales. A further report, due to be published in February 2015, will detail the results of the National Secondary Care COPD Clinical Audit 2014.

Summary of recommendations

These recommendations are directed with equal weight towards commissioners and providers, as they are relevant to both good clinical practice and the commissioning of COPD services. We suggest that they are discussed carefully at trust/CCG board level and within local respiratory programme groups.

- Patients admitted with COPD exacerbation should receive a respiratory specialist opinion within 24 hours.
- Patients with COPD exacerbation who need onward hospital care after their stay on the medical admissions unit should be managed in a respiratory ward.
- All patients requiring non-invasive ventilation (NIV) should have access to level 2 care.
- Respiratory wards should be staffed to run at least one of the level 2 beds, the number being dependent upon demand and size of the hospital, in which NIV can be administered according to accepted clinical guidelines.
- Intensive care unit (ICU) outreach services should be available 24 hours, 7 days a week.
- All hospitals/units should have a fully-funded and resourced smoking cessation programme delivered by dedicated smoking cessation practitioners.
- All hospitals/units should make spirometry results accessible from every computer desktop; there should be a data sharing agreement between primary and secondary care that allows general practice spirometry data to be made universally available.
- Post-discharge pulmonary rehabilitation services should be available within 4 weeks of referral.
- Each unit should nominate a respiratory clinical lead for discharge care and integrating services, this individual having designated time to improve the uptake of discharge bundles, improve the quality of discharge information and work collaboratively with colleagues in primary care to improve integrated pathways for COPD.
- Acute and community providers, primary care, patient groups and commissioners should work collaboratively via local respiratory programme groups to improve coordinated care and formalise COPD pathways; respiratory specialists should take a lead in this process, forming such groups if they do not exist at present.

Chronic obstructive pulmonary disease (COPD) is common, usually progressive and is a leading cause of mortality and morbidity globally. The World Health Organization (WHO) (1) estimates that COPD is responsible for 5% of annual deaths. Whilst 835,000 people in the UK have been diagnosed with the disease, it is estimated a further 2 million may be unidentified (2). COPD kills about 25,000 people per annum in England and Wales, is the fifth biggest killer in the UK and the only major cause of death on the increase (2, 3). It is a common cause of hospital admission and a major burden on primary care services. COPD causes progressive breathlessness with cough and wheeze, punctuated by exacerbations (flare-ups) that may lead to hospital admission. It associates with increasing frailty and a number of comorbidities.

In 2014, after 17 years of national audit, it is clear that the organisation of care and the resources allocated to people with COPD still varies unacceptably across the NHS hospitals of England and Wales. Two patients who have the same condition and an equivalent level of severity and comorbidities may receive totally different standards of care, dependent upon the organisation and resources available within the hospitals to which they are admitted. In one hospital they will be seen early by a respiratory specialist, be admitted under a specialist team and discharged into an integrated COPD pathway within the community. In another they will be admitted, managed and discharged without ever benefitting from such care.

The key finding from this audit is that whilst some specialty resources available for better COPD care have improved since the 2008 round, many patients are still unable to access them; either the model of hospital care does not provide for specialty input to COPD patients or it is unavailable 7 days a week.

There have however been some notable improvements in resource that do have the potential to affect patient care in a positive way: there has been an increase in respiratory consultant numbers, there is better availability of palliative care, there are more supported discharge services and the organisation of NIV has improved. Pockets of excellence continue but there remains unacceptable variation in the organisation and delivery of COPD services when assessed against key standards. Significantly, this variation occurs on a backdrop of a 22% rise in median emergency medical admissions since 2008, with COPD admissions having risen by 13%. Although the number of respiratory consultants has increased from a median of three to four per unit, reflecting the drive to consultant-delivered care, access to key members of the wider multidisciplinary team (MDT), notably respiratory specialist nurses, has declined. Access to specialist respiratory review is markedly reduced on non-respiratory wards and there is a major gap in service delivery out of hours and at weekends. The availability of smoking cessation services (a key treatment for COPD), access to spirometry results and post-discharge pulmonary rehabilitation is inadequate.

Our recommendations for service change are intended to improve care for COPD patients across each of the NHS domains. We believe they will help to reduce respiratory deaths and also benefit the wider delivery of respiratory and integrated services. The over-riding message, above all else, is that COPD patients admitted with exacerbation should be cared for by an MDT of respiratory specialists on a respiratory ward; the service should be organised and resourced to provide that care 7 days a week. The respiratory ward should be staffed to run at least one level 2 bed where NIV can be administered. Hospitals that are unable to provide NIV, or undertake it to a satisfactory standard, should not be admitting patients with acute exacerbation of COPD.

We also propose that greater emphasis be given to improving processes for managing COPD around discharge and beyond; respiratory specialists should take an active role in leading this activity, in helping to develop interface services and advising, via formally agreed structures that link into local clinical commissioning groups (CCGs), on the development or regular updating of care pathways for the disease. We hope this will embed better commissioning of COPD services.

We believe these recommendations, taken as a whole, will lead not only to further improvements in care but also reduce the variation in organisation and resource that has been so evident after each round of national audit to date.

'All patients requiring admission with acute exacerbation of COPD should be cared for by a respiratory specialist in a respiratory ward.'

Key findings: Performance against [NICE COPD quality standards \(QS\)](#)

‘There have been some significant improvements in COPD care since 2008.’

Access to palliative care services: [QS 13](#)

- There has been an increase in the provision of on-site palliative care services from 50% to 87% since 2008, though the amount of professional time available to patients remains very variable (19% of units report less than 0.5 of a whole-time equivalent (WTE) member of staff available for the service).

Organisation of non-invasive ventilation (NIV): [QS 11](#)

- The organisation of NIV services has improved significantly; 81% of respiratory wards now provide this treatment (74% in 2008), there has been a median increase of one intensive care unit bed per unit, fewer general wards are undertaking NIV (7% down from 12%) and 90% of units now provide a training programme for staff undertaking NIV.

Availability of early/supported discharge services: [QS 10](#)

- The availability of supported discharge services has increased from 60% to 82% since 2008; teams working specifically across the primary/secondary interface (for one-third of units), as opposed to those based mainly in the hospital or primary care setting, provide the most comprehensive service (including weekend working).

‘But there remains unacceptable variation in COPD care.’

Access to specialist respiratory care: [QS 10](#)

- Access to daily specialist respiratory review is much better on respiratory wards than other wards (84% versus 27%, 2014 data).
- Despite 81% of units in 2014 undertaking NIV, 59% state their respiratory ward(s) do not undertake level 2 care.
- Fewer units (71%, from 80% in 2008) now have access to a respiratory specialist nurse for all their COPD patients, despite the increase in caseload.

Access to out-of-hours and weekend care: [QS 10](#)

- Levels of care are much reduced at weekends; clinical review is less frequent, as is access to specialist respiratory review (both medical and nursing) and critical care outreach services. Moreover, only 30% of critical care outreach teams operate out of hours during weekdays; 20% do not operate at weekends.

Access to spirometry results: [QS 1](#)

- Only 34% of units reported they had access to an information and communications technology (ICT) system providing available hospital spirometry results, with 6% of units able to access primary care spirometry results.

Access to smoking cessation services in hospital: [QS 5](#)

- Thirty-seven per cent of units have no access to inpatient smoking cessation services, with an additional 34% reporting less than 0.5 of a WTE member of staff available to undertake this activity.

Access to pulmonary rehabilitation: [QS 6](#)

- Although 92% of units had potential access to pulmonary rehabilitation for patients after discharge, only 38% reported that it was available within 4 weeks.

‘There are other important messages, too.’

Discharge processes, integration and planning longer-term: [QS 2/QS 3/ QS 6/ QS 7/ QS 12](#)

- Discharge and integration of care seem less organised and resourced than admission processes. Thus, 30% of units do not deploy discharge care bundles, 18% of units have no access to an early/supported discharge service, 55% of units do not undertake an MDT meeting for COPD patients, only 27% of respiratory physicians have dedicated time to develop integrated services, only 60% of health communities have an integrated care pathway for COPD patients and only 58% of units have a respiratory interest represented at clinical commissioning group (CCG) level.

Developing and reporting an organisational score

- We demonstrate an organisational score, based on points awarded according to standards achieved and availability of desirable services, devised by the national COPD secondary care audit workstream group. It illustrates clearly the wide distribution of attainment, against which improvement might be judged in future audit.

Undertaking the national COPD secondary care audit in 2014

- All units were invited to provide feedback on both elements of the secondary care audit (organisational and clinical) via an online survey. Many reported great difficulty obtaining organisational data and retrieving information from case notes (or indeed finding the case notes after discharge), despite a significant reduction in the length of each dataset following an initial consultation and pilot exercise. A more detailed summary of the feedback relevant to each element of the secondary care audit will be made available on the National COPD Audit Programme website (www.rcplondon.ac.uk/COPD) and further reference will be made to this in the report of the clinical audit.

Recommendations

1 Access to respiratory specialists and specialist care, out-of-hours care and outreach services

- The data demonstrate suboptimal access to respiratory specialist review, both medical and nursing, on non-respiratory wards. Some units continue to deliver NIV on non-respiratory wards and without access to high-dependency (HDU) facilities, early warning detection systems or ICU outreach services. Access to the latter is also diminished 'out of hours' and at weekends. Previous COPD audit has shown appreciable numbers of COPD exacerbations are managed outside of respiratory wards and we have no reason to suspect any differently this time round.

Although the current financial environment is challenging, we feel this situation cannot be allowed to continue; the NICE quality standards and BTS guidelines are clear in their assertion that respiratory specialists should manage COPD patients, and NIV should be given in an appropriate place by appropriately trained individuals. Our recommendations are therefore that all patients whose primary diagnosis is COPD exacerbation should receive a specialist respiratory opinion within 24 hours of admission. Patients with COPD exacerbation who need to remain in hospital beyond their initial admission unit stay should be managed on a respiratory ward, or wards, one of which should be staffed to run at least one level 2 bed where NIV can be administered, commensurate on demand and the size of hospital. ICU outreach services should be available 24 hours, 7 days a week. **We recommend these items as future auditable standards.**

The principle is no different to that of stroke or coronary patients being managed in a specific environment, though it requires an acceptance that the total number of respiratory beds will need to rise to more than one ward in many hospitals. There will need to be a reappraisal of medical and nursing staff levels on respiratory wards.

Reorganisation but also investment will be necessary to achieve this change; NHS trusts will need to consider not only the number of respiratory consultants and trainees available to provide this service, but also the support from respiratory nurse specialists and the wider MDT, ensuring these vital team members are replaced if they leave post and that staffing levels are sufficient to permit weekend working; multi-site trusts may need to reconfigure beds and expertise; adjacent trusts may need to work better with each other to provide the necessary number of beds and specialist cover; respiratory physicians and geriatricians may need to work better together so that shared beds and expertise can be applied to COPD patients in the convalescent phase of their acute episode. It is likely, however, that a significant increase in respiratory nursing and medical staff will be necessary to achieve the requisite level of multidisciplinary care.

2 Smoking cessation

- Smoking cessation is a vital intervention, and therapy, for COPD patients. All hospitals/units should have a fully-funded and resourced smoking cessation programme delivered by dedicated smoking cessation practitioners. At least 1 WTE per week of smoking cessation support, commensurate with the size of the hospital/unit, should be delivered to patients (through individual and group sessions), demonstrable by future audit. **We recommend this item as a local/national CQUIN and a future auditable standard.**

3 Spirometry results

- All hospitals/units should make spirometry results, normally available on lung function laboratory software, accessible from every computer desktop via their IT department's browser system/intranet. There should be a data sharing agreement between hospital and primary care IT services that ensures general practice spirometry data are made universally available. **We recommend this item as a future auditable standard.**

4 Discharge processes and integrating care

- We believe this is a key area to develop, as also observed by the [King's Fund \(4\)](#), and improvements are unlikely to occur unless acute trusts, community trusts and CCGs work more effectively together. It is clear that the use of discharge care bundles should increase; supported discharge teams seem to function more effectively if they work in an integrated fashion; access to post-exacerbation pulmonary rehabilitation must improve in line with accepted clinical guidelines, so that patients are seen within 4 weeks.

Respiratory specialists must show leadership in this area and ensure that evidence-based interventions are knitted into local pathways and commissioning processes. As a group they are presently underrepresented; insufficient respiratory consultant and nurse time is available for the strategic planning of respiratory services. We therefore recommend that each acute hospital, or trust, nominates a respiratory clinical lead for discharge care and integrating services, this individual having dedicated time within their job plan and responsibility for establishing discharge bundles within their organisation, improving the transfer and quality of discharge information to primary care teams, liaising with the existing CCG respiratory programme group to formalise pathways or, where such a group is absent, forming one. **We recommend these items as future auditable standards.**

5 Developing improvement programmes

- The addition of a domain-based and comparative organisational score to the data reporting allows individual units and other stakeholders to view areas of care that may require particular attention. We strongly recommend that units discuss these elements in addition to recommendations 1–4 above. Discussions should take place not only within a unit's management, governance and improvement groups but also with managerial and clinical colleagues in primary care. Units should develop an improvement plan, agreed by the MDT and supported formally at trust board and CCG level, based upon the recommendations within the national and their site-specific report. The plan should contain clear timelines for change, and provide the basis for successful re-audit.
- Sharing good practice is a key part of the improvement process, and the National COPD Programme is actively engaged in developing this activity across its workstreams, with a view to assisting units. We would be pleased to hear from those with innovative solutions that have led to tangible improvements in local COPD service organisation, or indeed from those wishing to contact leads in other trusts, provide feedback or share good practice: **COPD@rcplondon.ac.uk #COPDaudit #COPDwhocares?**

'All patients requiring admission with acute exacerbation of COPD should be cared for by a respiratory specialist in a respiratory ward.'

1. Introduction

The 2008 national COPD audit comprised a survey of acute unit organisation and resources, linked to a clinical audit of COPD exacerbations with outcomes at 90 days. There was also a survey undertaken in primary care and a limited study of patient experience. The survey of organisation and resources identified an increase in staffing and the availability of some COPD-specific services such as non-invasive ventilation (NIV) and supported discharge since 2003, though palliative care support was lacking. The clinical audit showed many examples of good practice, but there were significant problems around the timely management of patients with ventilatory failure and the application of NIV. Both elements highlighted significant variation in the standard of COPD care across UK units. Further challenges were identified in the management of older patients and those with pneumonia. Although the main findings were published widely, site-specific data were not made publicly available.

The National COPD Audit Programme, commissioned by the Health Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA), sets out an ambitious 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 will look at COPD care across the patient pathway, both in and out of hospital, bringing together key elements from the primary and secondary 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 the Health and Social Care Information Centre (HSCIC).

There are four programme workstreams:

1. Primary care: collection of audit data from general practice patient record systems; delivered by the RCP and the HSCIC, working with PCRS-UK and the RCGP
2. Secondary care: audits of patients admitted to hospital with COPD exacerbation, allied to outcomes at 30 and 90 days; organisational audits of the resourcing and organisation of COPD services in acute units admitting patients with COPD exacerbation; delivered by the BTS, working with the RCP
3. Pulmonary rehabilitation: audits of service delivery, quality, organisation and resourcing of pulmonary rehabilitation services; delivered by the BTS, working with the RCP
4. Patient Reported Experience Measures (PREMs): a 1-year programme exploring the potential/feasibility for the future incorporation of PREMs into the main audit programme; delivered by the BLF, working with Picker Institute Europe.

Reported here are data from the 2014 audit of organisation and resourcing of COPD services in acute units in England and Wales. Please see the appendices for further detail on methods, the component parts of the wider COPD Audit Programme and programme governance.

2. Results

Presentation of results

This report gives national results for all units participating in this audit.

Where applicable, 2008 and 2003 national COPD audit data are recorded beneath tables to allow an assessment of change at the national level. As both of these earlier audits included units outside England and Wales, data from these audits were reworked for just England and Wales. The 2014 audit asked many different questions compared to the previous audits, and only a few questions were applicable for providing a historical backdrop.

Sections 1–5 report results for each question asked in the audit, alongside the national performance.

Section 6 provides organisational scores. The algorithms that describe the scoring system for the organisational score are given in **Appendix B**.

Each section is preceded by a short summary of key messages and areas of practice identified as needing improvement. The executive summary, earlier in this report, provides an overview of all the key messages and recommendations, particularly in relation to published standards in the resourcing and organisation of care for COPD patients.

There was a small amount of data cleansing required to take account of unnecessary completion of nested questions and also of illogical data such as negative WTE values. Occasionally there were missing data, resulting in data cells being blank. There were also some questions that specifically had a 'not known' response option. For parsimony in the tabular presentation, these have been combined under an umbrella term of 'not stated'.

Please note that in tables and text, percentages have been rounded to the nearest percentage. Sometimes, when categories are combined to give a combined percentage, it is the numbers that are added and not the percentages.

Organisational data were received from 198 units: 181 units within 141 acute trusts in England and 17 units within 6 health boards in Wales. The response rate for NHS trusts/health boards was 99% (147/148).

Section 1: Admissions, staffing levels and general organisation of care

KEY FINDINGS

- There has been a 22% increase in the median number of medical admissions per unit since 2008.
- There has been a 13% increase in the median number of COPD admissions per unit since 2008.
- There has been an increase in the median number of respiratory consultants per unit from three to four since 2008.
- Staffing levels are otherwise reasonably constant, although there remain a significant number of unfilled vacancies across respiratory nursing, respiratory medical consultants/trainees, physiotherapy and technical staff.
- There are typically four specialist acute physicians per unit contributing to the acute take; one-third have a special respiratory interest.
- There has been a median increase of one ICU bed per unit since 2008, and two since 2003.
- There is insufficient access to specialist dietetic services for COPD and medical patients.
- Thirty-seven per cent of units do not have a smoking cessation service available in their unit.
- There has been an increase from 50% to 87% in the access to on-site palliative care services since 2008, although 19% of units report less than 0.5 WTE available, and 12% of units still have no access for their COPD patients.
- Patients with COPD exacerbation are reviewed less frequently at weekends than during the week. This is true of not just doctors, but also the wider respiratory MDT.
- The majority (59%) of respiratory wards do not undertake level 2 care.
- Five per cent of units report they have no ICU beds available for patients admitted with COPD.
- Eighty-eight per cent of units operate a system of early warning detection in relation to critically ill cases requiring ICU management, of which 70% do not provide a service overnight and 20% do not operate at weekends.

Areas identified as needing improvement:

- increase and improve access to specialist respiratory care during weekdays and at weekends
- increase smoking cessation services
- increase dietetic services
- continue to improve the level of palliative care services.

Emergency admissions in 2013

Table 1.1	National audit (n=198)
How many emergency medical admissions did your unit admit in 2013?	
Median	13,335
Interquartile range	10,125–29,741
Mean	16,521
Trimmed mean*	15,626
Units with data	190
Please give the number of emergency respiratory coded admissions in 2013:	
Median	2,433
Interquartile range	1,520–3,467
Mean	2,765
Trimmed mean*	2,557
Units with data	187
How many emergency COPD coded admissions did your unit admit in 2013?	
Median	570
Interquartile range	408–806
Mean	640
Trimmed mean*	613
Units with data	191

From previous audits:

Medical emergency admissions in 2007: median 10,953; interquartile range (IQR) 7,903–14,606; mean 11,843; 5% trimmed mean 11,417; n=202 units

COPD emergency admissions in 2007: median 504; IQR 360–766; mean 662; trimmed mean 590; n=201 units

COPD patients admitted in 2002: median 458; IQR 315–723; mean 624; trimmed mean 547; n=196 units

*Trimmed mean: the top and bottom 5% of the data are removed and a new mean value is computed. Sometimes in audit datasets with numerical admissions data, the outlier data may reflect coding error, and to compensate for this the median and interquartile range are usually used as summary statistics because these are less sensitive to outlier values. The mean is arguably a more informative measure for enabling estimates of total admissions to be made: to guard against undue outlier influence a trimmed mean, obtained using only the middle 90% of data, was computed.

The ratio of median 2013 emergency medical admissions to median 2007 emergency medical admissions is 1.22, whereas the ratio of trimmed means is 1.37. The ratio of median 2013 emergency COPD admissions to median 2007 emergency COPD admissions is 1.13, whereas the ratio of trimmed means is 1.04. It seems likely from this that the percentage increase in emergency COPD admissions since 2007 is less than that seen for all emergency medical admissions, which is perhaps a reflection of the impact of better community care?

Table 1.2		National audit (n=198)	
What was the total number of eligible cases for the audit (coded COPD admission) during the audit period (1 Feb–30 Apr 2014)?			
	Median	98	
	Interquartile range	69–146	
	Mean	117	
	Total	20,827	
	Units with data	178	
Did any eligible patients decide to opt out of the audit?			
	Yes	1% (n=2*)	
	No	81% (n=161)	
	Not stated	18% (n=35)	

*One unit stated that one patient opted out and one unit stated that 45 patients opted out.

Table 1.3		National audit (n=198)	
How many medical beds are there in your unit?			
	Median	207	
	Interquartile range	150–290	
	Units with data	187	
Emergency COPD coded admissions in 2013 per medical bed:			
	Median	2.6	
	Interquartile range	2.0–3.9	
	Units with data	182	

Admissions ward

Table 1.4	National audit (n=198)					
	Yes		No		Not stated	
Does your unit have an admissions ward?	99%	197	0%	-	0.5%	1

2008 audit: 94% with admissions ward

2003 audit: 90% with admissions ward

Review on admissions ward by senior decision maker

Table 1.5	National audit (n=197 with admissions ward)			
		Weekdays		Weekends
How frequently are patients on the admissions ward reviewed by a senior decision maker (ST3 or above)?				
Twice daily	41%	81	33%	65
Daily	54%	107	54%	106
Other	4%	8*	8%	15**
No review	0.5%	1	6%	11

*Comprised: three times daily (n=3 units said this); all admissions continuously reviewed by consultant 0800-2000; continuous presence up to 8.30 pm then 8.am; ongoing-shortly post admission; rolling ward round, there is continuous review with 2 formal ward rounds for acute admissions.

** Comprised: three times daily (n=3 units said this); all admissions continuously reviewed by consultant 0800-2000; all admissions seen within 12 hours – other patients on ward seen daily by SHO and by consultant only if ill; all patients admitted within 48 hours are reviewed daily; as requested; as required; if a problem; if Sick; less than daily; ongoing-shortly post admission; only if unwell; rolling ward round; usually 4 rounds per day up to 8 p.m. then 8 a.m.

Table 1.6	National audit (n=198)	
How many dedicated respiratory beds are there in your unit?		
	Median	27
	Interquartile range	19–38
	Units with data	190

Table 1.7	National audit (n=198)	
How many designated level 2 beds are there on your respiratory ward(s)?		
Zero	59%	117
One	1%	2
Two	5%	9
Three	3%	5
Four	14%	28
Five or more	16%	32
Not stated	3%	5

High-dependency units (HDUs)

Table 1.8	National audit (n=198)	
Does unit have the following high dependency areas?		
Mixed	64%	127
Medical	16%	32
Respiratory	16%	31
Other*	2%	3
No HDU	11%	22

*Comprised: surgical and vascular HDU; progressive care unit (PCU); and offsite.

2008 audit: mixed 66%, medical 14%, other 11% and none 9%

2003 audit: mixed 68%, medical 10%, other 5% and none 16%

In previous audits, the response options were mutually exclusive in the web tool. In the 2014 audit, units could select any of the options that applied to them, and some selected multiple options.

Table 1.9	National audit (n=198)	
How many HDU beds are there in your unit?		
Zero	15%	29
One	0.5%	1
Two	5%	9
Three	5%	9
Four	18%	35
Five	6%	12
Six	14%	27
Seven	1%	2
Eight	12%	23
Nine	2%	3
Ten or more	19%	38
Not stated	5%	10

Intensive care unit (ICU) beds

Ten units (5%) reported having no ICU beds available for COPD patients (national median – eight beds) and, of these, two hospitals had no recourse to HDU beds; of these, one hospital had no recourse to NIV.

Table 1.10	National audit (n=198)	
How many general operational intensive care beds, suitable for COPD patients, does your unit have?		
Zero	5%	10
One	0%	-
Two	1%	2
Three	2%	3
Four	6%	11
Five	5%	10
Six	16%	32
Seven	7%	14
Eight	15%	29
Nine	3%	6
Ten or more	35%	70
Not stated	6%	11

2008 audit: median 7, IQR 6–11 operational ICU beds and 9 units (4%) with none

2003 audit: median 6, IQR 5–8 operational ICU beds and 10 units (5%) with none

Use of a system of early warning detection

Table 1.11	National audit (n=198)					
	Yes	No	Yes	No	Not stated	
Does your unit use a system of early warning detection?	97%	192	2%	3	2%	3

Early warning detection for critically ill cases requiring ICU

Table 1.12	National audit (n=198)					
	Yes		No		Not stated	
Does your unit have an ICU outreach service for critically ill cases requiring ICU management?	88%	175	11%	21	1%	2
If yes (n=175), what ICU outreach service is available?						
Overnight	30%	53	70%	122		
Monday–Friday only	20%	35	80%	140		
7 days a week	80%	140	20%	35		

2008 audit: 88% using a system of early warning detection/ICU outreach

2003 audit: 68% using a system of early warning detection/ICU outreach

Contribution to the acute intake rota

Staff grade (number of units submitting WTE data on this staff grade)	National audit: Percentage (%) of units with					Median (IQR) WTE	Median (IQR) WTE per 1,000 emergency respiratory admissions 2013	Median (IQR) WTE per 1,000 emergency COPD admissions 2013
	No WTE	0.1–2.0 WTE	2.1–4.0 WTE	4.1–6.0 WTE	>6.0 WTE			
Table 1.13								
Consultant acute physicians (n=189)	11	17	34	17	20	4 (2–6)	1.5 (0.9–2.7)	6.5 (3.3–10.4)
Consultant geriatricians (n=185)	5	18	32	21	25	4 (3–7)	1.9 (1.1–3.1)	8.2 (4.2–12.4)
Respiratory consultants (n=191)	3	28	43	14	12	3 (2–5)	1.4 (1.0–2.0)	6.1 (4.2–8.3)
Other medical consultants (n=181)	1	6	18	23	53	7 (5–10)	2.9 (1.9–5.1)	12.8 (7.3–21.0)
Medical specialist registrars (SpRs)/specialty trainees (n=170)	3	4	4	4	85	12 (9–15)	4.7 (3.0–7.1)	19.8 (13.1–31.3)

Subspecialty interest in respiratory medicine

Table 1.14	National audit (n=198)					
	Yes		No		Not stated	
Do any of the consultant acute physicians have a subspecialty interest in respiratory medicine?	33%	66	61%	121	6%	11

Staff posts in the respiratory team (WTE – to include both filled and vacant posts)

Staff grade (192–194 units submitting WTE data)	National audit: % of units with					Median (IQR) WTE	Median (IQR) WTE per 1,000 emergency respiratory admissions 2013	Median (IQR) WTE per 1,000 emergency COPD admissions 2013
	NO WTE	0.1–1.0 WTE	1.1–2.0 WTE	2.1–3.0 WTE	>3.0 WTE			
Table 1.15								
Respiratory consultant	-	2	19	22	58	4 (3–5)	1.6 (1.1–2.4)	6.7 (4.8–9.6)
FY1	0.5	20	41	24	14	2 (2–3)	0.9 (0.6–1.5)	3.8 (2.8–5.5)
FY2	34	42	16	6	3	1 (0–1)	0.4 (0–0.7)	1.6 (0–2.9)
CT1/CT2	8	33	32	16	11	2 (1–3)	0.7 (0.5–1.1)	3.1 (1.9–4.7)
ST3 and above	5	14	44	17	20	2 (2–3)	0.9 (0.6–1.5)	3.8 (2.8–5.8)
Associate specialist	87	13	-	-	-	0 (0–0)	0 (0–0)	0 (0–0)
Staff grade	83	13	3	0.5	0.5	0 (0–0)	0 (0–0)	0 (0–0)
Respiratory physiologist (lung function technician)	12	25	28	13	22	2 (1–3)	0.8 (0.3–1.5)	3.4 (1.6–6.1)
Respiratory nurse	89	10	0.5	0.5	0.5	0 (0–0)	0 (0–0)	0 (0–0)
COPD nurse	47	16	11	10	15	1 (0–2)	0.2 (0–0.9)	0.9 (0–3.4)
Other specialist respiratory nurses	10	17	25	18	30	2 (1–4)	1.0 (0.5–1.9)	4.0 (2.1–7.3)
Specialist respiratory physiotherapist	25	36	16	12	11	1 (0.3–2)	0.5 (0–0.9)	1.9 (0–4.1)
Research registrar/fellow	84	8	4	2	2	0 (0–0)	0 (0–0)	0 (0–0)
Research nurse	76	14	6	3	2	0 (0–0)	0 (0–0)	0 (0–0)

Thirty-six units listed other staff members of their respiratory team that included a wide range of posts, including occupational therapy, healthcare assistants, dieticians and administrative staff.

Note that some units only submitted non-zero data, although most units mixed zero with non-zero data. Four units with a blank return for the whole of the question were excluded from the table.

The median (IQR) number of medical beds in the unit per respiratory consultant was 58 (40–81), n=183.

Staff posts 2014 vs 2008

Staff grade	Median (IQR) WTE 2007	Median (IQR) WTE 2013	Median (IQR) WTE per 1,000 emergency COPD admissions 2007	Median (IQR) WTE per 1,000 emergency COPD admissions 2013
Table 1.16				
Respiratory consultant	3 (2–4)	4 (3–5)	5.4 (3.6–7.9)	6.7 (4.8–9.6)
FY1	2 (1–3)	2 (2–3)	3.8 (2.3–5.5)	3.8 (2.8–5.5)
FY2	FY2/ST1/SHO 2 (2–3)	1 (0–1)	FY2/ST1/SHO 4.6 (2.7–6.2)	1.6 (0–2.9)
CT1/CT2	-	2 (1–3)	-	3.1 (1.9–4.7)
ST3 and above	2 (1–3)	2 (2–3)	3.9 (2.1–5.6)	3.8 (2.8–5.8)
Associate specialist	0 (0–0)	0 (0–0)	0 (0–0)	0 (0–0)
Staff grade	0 (0–0)	0 (0–0)	0 (0–0)	0 (0–0)
Respiratory physiologist (lung function technician)	1 (1–3)	2 (1–3)	2.7 (1.5–5.1)	3.4 (1.6–6.1)
Respiratory nurse	-	0 (0–0)	-	0 (0–0)
COPD nurse	1 (0–2)	1 (0–2)	1.9 (0–4.2)	0.9 (0–3.4)
Other specialist respiratory nurses	2 (1–3)	2 (1–4)	3.6 (1.9–6.8)	4.0 (2.1–7.3)
Specialist respiratory physiotherapist	1 (0.5–2)	1 (0.3–2)	2.1 (0.6–3.8)	1.9 (0–4.1)
Research registrar/fellow	-	0 (0–0)	-	0 (0–0)
Research nurse	-	0 (0–0)	-	0 (0–0)

In the 2003 audit, 22% of units had one WTE respiratory medical consultant or less and 11% had four or more. The median (IQR) number of WTE respiratory medical consultants was 2 (IQR 1–3), and per 1,000 admissions in 2003 it was 4.2 (IQR 2.3–6.3).

Unfilled vacancies in units at the time of completing the audit

Staff grade	National audit: Number of units with				
	NO WTE	0.1–1.0 WTE	1.1–2.0 WTE	2.1–3.0 WTE	>3.0 WTE
Table 1.17					
Respiratory consultants	140	52	5	-	1
FY1	190	7	1	-	-
FY2	189	8	1	-	-
CT1/CT2	177	18	2	-	1
ST3 and above	143	37	12	3	3
Associate specialist	196	1	1	-	-
Staff grade	195	3	-	-	-
Respiratory physiologist (lung function technician)	169	21	2	4	2

Respiratory nurse	196	2	-	-	-
COPD nurse	176	19	2	-	1
Other specialist respiratory nurses	179	17	2	-	-
Specialist respiratory physiotherapist	182	13	2	-	1
Research registrar/fellow	195	3	-	-	-
Research nurse	196	2	-	-	-

Note that it was sometimes difficult to distinguish between having no vacancies and having missing data when the staff grade data cell was left blank. It was clear that some units only submitted non-zero data, although most units indicated no vacancy together with non-zero data. Ten units with a blank return for the whole of the question on the web tool were assumed to have no vacancies.

Pulmonary rehabilitation (PR) service

Table 1.18	National audit (n=198)					
	Yes		No		Not stated	
Does your unit run its own pulmonary rehabilitation service?	60%	118	39%	77	2%	3

2008 audit: 57% of units had access to a formal programme for all eligible patients, 33% had access for some patients and 10% had no access

2003 audit: 64% of units had a formal PR programme

Inpatient dietetic service

Table 1.19	National audit (n=198)					
	Yes		No		Not stated	
Is there an inpatient dietetic service in the unit available for COPD patients?	88%	174	12%	23	0.5%	1

Table 1.20	National audit (n=174 with dietetic service)					
How many WTE are allocated to the medical wards to run the dietetic service?						
Less than 0.5	32%				55	
0.5	9%				15	
1	14%				25	
2	9%				15	
3	3%				5	
4 or more	9%				15	
Other*	6%				11	
Not stated	19%				33	

*Comprised: general dietetic service not specifically for COPD patients; 3.31 WTE for the whole unit; generic dietetic service for all patients; it is part of general dietetics service they will see underweight but not obese patients on ward; no specific no for medicine – trust wide; as and when required; 0.8 WTE at 'Breathing Space' (Rotherham Nurse-led Community COPD Unit); 0.6 WTE; 0.75 WTE; 0.9 WTE; and 1.7 WTE.

Smoking cessation service

Table 1.21	National audit (n=198)					
	Yes			No		
Is there a smoking cessation service available in the unit?	63%	124	37%	74		

Table 1.22 National audit (n=124 with smoking cessation service)

How many WTE are allocated to the medical wards to run the smoking cessation service?

Less than 0.5	34%	42
0.5	11%	14
1	21%	26
2	11%	14
3	2%	2
4 or more	1%	1
Other*	4%	5
Not stated	16%	20

*Comprised: provided by staff on the ward and COPD team; cardiac rehab team offer a smoking cessation service on an 'as required' basis; 2.6 WTE; 1.6 WTE; and 0.6 WTE.

Palliative care service

Table 1.23 National audit (n=198)

	National audit (n=198)					
	Yes	No	Not stated			
Is there an on-site palliative care service available for COPD patients?	87%	173	12%	23	1%	2

2008 audit: half (50%) of units did not have formal arrangements for patients with COPD to receive palliative care; two-thirds (65%) were planning to develop palliative care services

Table 1.24 National audit (n=173 with on-site palliative care service)

How many WTE are provided to run the service?

Less than 0.5	19%	33
0.5	5%	8
1	10%	17
2	17%	29
3	8%	14
4 or more	20%	34
Other*	8%	14
Not stated	14%	24

*Comprised: not a separate COPD service utilise hospital team; it is part of general palliative care service; generic palliative care service for all eligible patients; access to 7-day multi-professional hospital palliative care service; referrals seen within 24 hours; 3.8 WTE; 3 consultants 8 CNS (not just for COPD patients); 2.9 WTE; 2.5 WTE; 2.2 WTE; 2 nurses 1 consultant 3 sessions; 1.5 WTE; 1.3 WTE; 1.2 WTE; and 1.0 WTE palliative care nurse 0.3 WTE consultant.

Participation in respiratory research

Table 1.25 National audit (n=198)

Does your unit participate in respiratory research?

Yes – clinical trials	58%	114
Yes – basic research	19%	38
Yes – clinical research	36%	72
Yes – quality improvement research	37%	74
Yes – other	8%	15
No – no participation in research	17%	34
Not known	5%	9

Section 2: Organisation of acute respiratory care

KEY FINDINGS

- The availability of a respiratory nurse to see COPD patients has fallen back to the level of 2003 (74% from 80%). Eleven per cent of units have no respiratory nurse available to see COPD patients.
- There has been a further improvement in specialty triage, but 37% of units still do not undertake this activity.
- Access to specialist respiratory medical opinion/review is significantly reduced at weekends.
- Access to specialist respiratory nursing opinion/review is significantly reduced at weekends.
- Access to specialist respiratory medical and nursing review of COPD patients is significantly better on respiratory wards.

Areas identified as needing improvement:

- better access to specialist respiratory care
- better access to specialist respiratory beds.

Respiratory take separate from rest of acute medicine

Table 2.1	National audit (n=198)					
	Yes		No		Not stated	
Does your unit operate a respiratory take separate from rest of acute medicine?	10%	20	88%	174	2%	4

Speciality triage

Table 2.2.1	National audit (n=198)					
	Yes		No		Not stated	
Does your unit operate a system of speciality triage?	61%	120	37%	74	2%	4

Table 2.2.2	National audit (n=198)					
	Every day		On weekdays only		Not stated	
If yes (n=120), are cases triaged to respiratory medicine?	81%	97	18%	22	1%	1

2008 audit: 53% with specialty triage used in the unit

2003 audit: 32% with specialty triage used in the unit

On-call respiratory consultant

Table 2.3.1	National audit (n=198)					
	Yes		No		Not stated	
Is there an on-call respiratory consultant available?	31%	62	67%	132	2%	4

Table 2.3.2	National audit (n=198)					
	Every day		On weekdays only		Not stated	
If yes (n=62), when are they available?	68%	42	29%	18	3%	2

Availability of on-call respiratory SpR/specialty trainee

Table 2.4	National audit (n=198)	
Is there an on-call respiratory SpR/specialty trainee available (tick all that apply)?		
On weekdays only	31%	62
Every day	4%	7
There is a specific respiratory SpR rota	8%	15
No	58%	114
Not stated	3%	5

Daily ward round of new COPD patients by a senior decision maker from the respiratory team (SpR or above)

Table 2.5.1	National audit (n=198)					
	Yes		No		Not stated	
On the MAU / admissions ward	39%	77	59%	117	2%	4
	Every day		On weekdays only		Not stated	
If yes (n=77), when are they available?	34%	26	66%	51	0%	-
Table 2.5.2	National audit (n=198)					
	Yes		No		Not stated	
On the respiratory ward(s)	84%	166	15%	29	2%	3
	Every day		On weekdays only		Not stated	
If yes (n=166), when are they available?	23%	39	71%	118	5%	9
Table 2.5.3	National audit (n=198)					
	Yes		No		Not stated	
On the other ward(s)	27%	53	71%	141	2%	4
	Every day		On weekdays only		Not stated	
If yes (n=53), when are they available?	26%	14	72%	38	2%	1

Respiratory nurse(s) reviewing COPD patients

Table 2.6	National audit (n=198)					
	Yes		No		Not stated	
Is there a respiratory nurse(s) available to review COPD patients?	87%	172	11%	21	3%	5
	Every day		On weekdays only		Not stated	
If yes (n=172), when does this take place?	20%	34	78%	135	2%	3

Access to respiratory nurse

Table 2.7	National audit (n=198)									
	All COPD patients		Some patients – only those admitted under respiratory physician		Some patients – other		None		Not stated	
Which patients have access to a respiratory nurse?	71%	140	11%	21	11%	22	4%	7	4%	8

2008 audit: 80% all, 4% some under respiratory consultant, 12% some – other, and 3% none

2003 audit: 71% all, 5% some under respiratory consultant, 14% some – other, and 9% none

Physiotherapist(s) reviewing COPD patients

Table 2.8	National audit (n=198)					
	Yes		No		Not stated	
Is there a physiotherapist available to review COPD patients where necessary?	94%	187	3%	5	3%	6
	Every day		On weekdays only		Other*	
If yes (n=187), when can this take place?	72%	135	25%	47	3%	5
	National audit (n=198)					
If yes (n=187), what physiotherapists are available?	General rotational		74%		138	
	Specific respiratory rotational		49%		91	
	Type not stated		2%		3	

*Units were not asked to specify what was meant by 'other'.

Access to respiratory physiotherapist

Table 2.9	National audit (n=198)									
	All COPD patients		Some patients – only those admitted under respiratory physician		Some patients – other		None		Not stated	
Which patients have access to a respiratory physiotherapist?	64%	127	14%	28	13%	25	5%	10	4%	8

Section 3: Managing respiratory failure – NIV

KEY FINDINGS

- There has been a significant increase in the number of respiratory wards providing NIV (74% to 81%, 2008–2014).
- The percentage of general wards undertaking NIV has reduced (12% to 7%, 2008–2014).
- The percentage of HDUs and ICUs undertaking NIV on COPD patients has increased.

Areas identified as needing improvement:

- The number of units providing NIV on their respiratory wards should increase further.
- NIV should not be given on general wards.

Named lead clinician for NIV

Table 3.1	National audit (n=198)					
	Yes		No		Not stated	
Is there a named lead clinician responsible for the NIV service?	88%	175	10%	20	2%	3

2008 audit: 'There is a named consultant responsible for the NIV service' – 72% met in full, 17% partially met and 10% not met at all

Settings for NIV

Table 3.2	National audit (n=198)	
In which setting is non-invasive ventilation (NIV) available (tick all that apply)?		
MAU/admissions ward	54%	107
A&E/ED	74%	147
Respiratory ward	81%	160
General ward	7%	14
HDU	81%	161
ITU	83%	165
NIV not available	0.5%	1
Other*	6%	12

*Comprised: CCU (n=4); RSU; respiratory HDU; respiratory care unit; respiratory assessment unit; PCU; nurse-led unit ('Breathing Space'); NIV available on general wards but patients are moved as soon as possible to a respiratory ward; and home.

2008 audit: 74% respiratory wards, 12% general wards, 75% HDU and 58% ICU

2003 audit: 62% ICU, 66% HDU and 65% wards

Training programme for staff providing NIV

Table 3.3	National audit (n=198)					
	Yes		No		Not stated	
Is there a training programme for staff providing NIV?	90%	178	8%	15	3%	5
If yes (n=178), what does the training programme cover (tick all that apply)?						
Indications for NIV	96%	171				
Initiation of NIV	96%	171				
Nursing patients on NIV	93%	166				
Not known	3%	5				

2008 audit: 'There is an ongoing inter-professional training programme for ALL staff involved in the care of patients established on NIV' – 52% met in full, 40% partially met and 8% not met at all

Section 4: Managing respiratory failure – emergency oxygen therapy

KEY FINDINGS

- Ten per cent of units have implemented full electronic prescribing, including oxygen.
- Most units (95%) have an oxygen policy, a chart on which to prescribe oxygen (91%) and an appropriate method with which to record target/actual saturation and prescribed amount of oxygen.
- Only 59% of units have a training programme for oxygen therapy.

Areas identified as needing improvement:

- The number of training programmes for oxygen therapy needs to increase – units providing a comprehensive programme could share expertise with those who do not have this service.

Oxygen policy

Table 4.1	National audit (n=198)					
	Yes		No		Not stated	
Does your unit have an oxygen policy in place?	95%	189	4%	7	1%	2

Paper or electronic prescribing

Table 4.2	National audit (n=198)	
Does your unit have paper prescriptions or electronic prescribing?		
Paper prescriptions only	81%	160
Electronic prescribing partially implemented	9%	17
Electronic prescribing fully implemented	10%	19
Not stated	1%	2

Medication chart

Table 4.3	National audit (n=198)					
	Yes		No		Not stated	
Does the medication chart/record have a designated place in which to prescribe oxygen?	91%	181	7%	14	2%	3

Monitoring chart

Table 4.4	National audit (n=198)	
Is there a monitoring chart (this may be the prescription and/or observation or a specific chart) that allows the following to be recorded?		
Target saturation	88%	175
Actual saturation	95%	188
Amount of oxygen administered	95%	188

Oxygen therapy training programme

Table 4.5	National audit (n=198)					
	Yes		No		Not stated	
Does the unit have an oxygen therapy training programme in place?	59%	117	32%	64	9%	17
If yes (n=117), what does the training programme cover (tick all that apply)?						
Prescription of emergency oxygen for doctors	84%	98				
Monitoring of emergency oxygen for nurses and other health professionals	92%	108				
None of the above	1%	1				
Not known	1%	1				

Section 5: Integrating care across primary and secondary sectors

KEY FINDINGS

Resources:

- There has been an increase in the availability of early/supported discharge services (EDS).
- Of the models audited (hospital-based, community-based, single integrated), hospital-based teams have fewer staff (median 4) than community-based (median 5) and single integrated (median 6) teams.
- Fifty-six per cent of the single integrated teams are employed by acute trusts.
- Only 27% of respiratory consultants have allocated time to develop integrated services.
- Only 58% of units report a respiratory interested GP or respiratory consultant representing respiratory medicine within the local CCG.
- Electronic access to both hospital (34%) and primary care (6%) spirometry results for patients admitted with COPD exacerbation is inadequate.

Organisation:

- Nearly 70% of units use discharge bundles at the point of discharge, although 30% still do not.
- There has been a significant increase in the number of units with access to a team undertaking early/supported discharge (60% to 82%), though one-fifth (18%) of units still have no access to a scheme.
- These schemes undertake a wide variety of activities beyond supported discharge alone.
- Access to early/supported discharge schemes is reduced significantly at weekends.
- Of the models assessed (hospital-based, community-based or single integrated team), a single integrated team working across the sectors seems most effective, having more staff, increased weekend working (49% compared with 22% for community-based and 33% for hospital-based) and providing greater coverage for both assisted discharge and admissions avoidance.
- Ninety-two per cent of units have potential access to a pulmonary rehabilitation programme after discharge, but in only 38% of these units is it available within 4 weeks.
- Nearly half (41%) of units have access to tele-health, supervised by GPs (38%), community COPD teams (50%) or community matrons (49%).
- One-third (31%) of units do not have a locally agreed COPD care pathway.
- Forty-five per cent of units now have a regular MDT meeting for COPD cases.

Areas identified as needing improvement:

- Increase the use of discharge care bundles.
- Develop supported discharge teams that work across the sectors effectively.
- Continue to develop integrated care, with respiratory specialist input into the commissioning process.
- Support respiratory specialists to develop this work by allocating appropriate time within job plans.
- Improve access to post-discharge pulmonary rehabilitation services.
- Improve access to hospital and primary care spirometry results.

Discharge bundles

Table 5.1	National audit (n=198)					
	Yes		No		Not stated	
Are discharge bundles used for COPD patients?	69%	136	30%	59	2%	3

Early/assisted discharge teams

Table 5.2	National audit (n=198)	
Does the unit have a team which manages early/assisted discharge of COPD patients (tick all that apply)?		
Hospital-based team*	32%	64
Community-based team*	38%	75
Single integrated team which works across primary/secondary interface*	32%	63
No access to early/assisted discharge	18%	35
Not known	4%	7

2008 audit: 60% had patient access to an EDS

2003 audit: 46% had patient access to an EDS

The percentage for those having access to an EDS of any type – ie hospital-based, community-based or integrated team was 79% (156) overall, adjusted to 82% (156/191) if the ‘not known’ responses are omitted. This then gives a comparator against previous rounds of audit.

Early/assisted discharge teams: hospital-based team

These questions were answered independently of previous questions. The aim was to assess the adequacy of communication and/or integration between the primary and secondary sectors in the wider sense. The national denominator comprised those units that responded to all or part of this set of questions (5.2.1), with the assumption that the questions were applicable to the unit.

Table 5.3	National audit (n=93)	
How many days a week does it (the hospital-based team) operate?		
Weekdays only	58%	54
Every day	33%	31
Not stated	9%	8
How many staff work for this service?		
Median (IQR) WTE	3.8 (2.0–6.0), n=67	
What organisation employs the team?		
CCG	5%	5
Acute trust	75%	70
Community trust	6%	6
Mental health trust	0%	-
Another provider	4%	4
Not stated	9%	8
What services does this team provide?		
Pulmonary rehabilitation	38%	35
Admissions avoidance	53%	49
Out-reach early/supported discharge	76%	71
Oxygen assessment/follow-up FU	59%	55
Medicines management	68%	63
Nebuliser service	67%	62
Smoking cessation advice	63%	59
Other*	8%	7
Not stated	3%	3

*Comprised: refers in to community pulmonary rehab and smoking cessation services – links in with community matrons palliative care – provides follow-up; patient support groups; holistic assessment OT social work referral etc; follow-up clinics; telephone follow-up; early supported discharge; clinics NIV service; and acute trust-led COPD team run above services but no EAD.

Early/assisted discharge teams: community-based team

These questions were answered independent of previous questions. The aim was to assess the adequacy of communication and/or integration between the primary and secondary sectors in the wider sense. The national denominator comprised those units who responded to all or part of this set of questions (5.2.2), with the assumption that the questions were applicable to the unit.

Table 5.4	National audit (n=99)	
How many days a week does it (the community-based team) operate?		
Weekdays only	74%	73
Every day	22%	22
Not stated	4%	4
How many staff work for this service?		
Median (IQR) WTE	5.0 (3.0–7.5), n=73	
What organisation employs the team?		
CCG	24%	24
Acute trust	18%	18
Community trust	43%	43
Mental health trust	0%	-
Another provider	8%	8
Not stated	6%	6
What services does this team provide?		
Pulmonary rehabilitation	67%	66
Admissions avoidance	83%	82
Out-reach early/supported discharge	66%	65
Oxygen assessment/FU	64%	63
Medicines management	65%	64
Nebuliser service	56%	55
Smoking cessation advice	65%	64
Other*	6%	6
Not stated	3%	3

*Comprised: the smoking cessation service is generic – apart from the PR programme there is no community-based specialist COPD team – pulmonary rehab is provided by the out-of-hours GP provider – one PR programme and the smoking cessation service are provided by the community trust; no EAD but either services offered – work closely with hosp team; dietetic; community staff education and support; CBT; and advanced care planning.

Early/assisted discharge teams: single integrated team

These questions were answered independently of previous questions. The aim was to assess the adequacy of communication and/or integration between the primary and secondary sectors in the wider sense. The national denominator comprised those units that responded to all or part of this set of questions (5.2.3), with the assumption that the questions were applicable to the unit.

Table 5.5	National audit (n=71)	
How many days a week does it (the single integrated team) operate?		
Weekdays only	45%	32
Every day	49%	35
Not stated	6%	4
How many staff work for this service?		
Median (IQR) WTE	6.0 (3.1–10.0), n=55	
What organisation employs the team?		
CCG	11%	8
Acute trust	56%	40
Community trust	14%	10
Mental health trust	0%	-
Another provider	8%	6
Not stated	10%	7
What services does this team provide?		
Pulmonary rehabilitation	58%	41
Admissions avoidance	83%	59
Out-reach early/supported discharge	83%	59
Oxygen assessment/FU	69%	49
Medicines management	73%	52
Nebuliser service	63%	45
Smoking cessation advice	56%	40
Other*	7%	5
Not stated	1%	1

*Comprised: advanced care planning; advanced care planning - disabling breathlessness care - end-of-life care - SHINE (Seasonal Health Interventions Referrals) - patient specific protocols psychological support including anxiety and depression; community clinics – end-of-life planning; community staff education; and the team does 6 days a week rather than every day.

Communication between the hospital and the community COPD team

These questions were answered in their own right, independently of previous questions. The national denominator comprised all units.

Table 5.6	National audit (n=198)	
Is there regular communication between the hospital and the community COPD team?		
Yes – shared caseload	45%	89
Yes – ad hoc	35%	69
No	7%	14
Not stated	13%	26

Community matrons

Table 5.7	National audit (n=198)					
	Yes		No		Not stated	
Are there community matrons locally who care for patients with COPD?	79%	157	13%	26	8%	15
If yes (n=157), is the unit able to discharge COPD patients directly to the care of the community matrons?	80%	125	15%	23	6%	9

Pulmonary rehabilitation service on discharge

Table 5.8	National audit (n=198)					
	Yes		No		Not stated	
Is there a pulmonary rehabilitation service available to COPD patients discharged following exacerbation?	92%	183	5%	10	3%	5
If yes (n=183), is it available within 4 weeks of hospital discharge?	38%	70	51%	93	11%	20
If yes (n=183), where is the service based (tick all that apply)?						
	Yes		No			
Hospital	47%	86	53%	97		
Community	83%	151	17%	32		

Tele-health systems

Table 5.9	National audit (n=198)					
	Yes		No		Not stated	
Are COPD patients supported locally by tele-health systems?	41%	82	54%	106	5%	10
If yes (n=82), who is responsible for the care of these patients (tick all that apply)?						
GP	38%	31				
Community COPD team	50%	41				
Community matron	49%	40				
Hospital team	13%	11				
Other*	7%	6				
Not known	3%	2				

*Comprised: long term conditions team; integrated team led by hospital consultant but with nurses and physios from community and acute trusts; integrated team; DN teams; community services; and adult community health care teams.

Nurse-led unit managing COPD cases in the community

Table 5.10	National audit (n=198)					
	Yes		No		Not stated	
Is there a nurse-led unit managing COPD cases in the community?	30%	60	67%	132	3%	6
If yes (n=60), does the unit take acute COPD admissions?	30%	18	60%	36	10%	6

Multidisciplinary team (MDT) meetings

Table 5.11	National audit (n=198)					
	Yes		No		Not stated	
Is there a regular MDT meeting for patients with COPD?	45%	90	48%	95	7%	13
If yes (n=90), which staff attend (tick all that apply)?						
Respiratory consultant	94%	85				
GP	6%	5				
Hospital-based respiratory/COPD nurse	77%	69				
Community-based respiratory/COPD nurse	80%	72				
Respiratory physiotherapist	51%	46				
Dietician	2%	2				
Community matron	30%	27				
Palliative care specialist	18%	16				
Other*	19%	17				
If yes (n=90), are:						
Minutes taken?	58%	52	39%	35	3%	3
Case-notes available?	81%	73	16%	14	3%	3
X-rays available?	87%	78	9%	8	4%	4
Blood tests available?	89%	80	7%	6	4%	4
If yes (n=90), how frequently does the meeting occur?						
Weekly	50%	45				
Fortnightly	12%	11				
Monthly	21%	19				
Other**	7%	6				
Not stated	10%	9				

*Comprised: admin team; case managers; community physiotherapist; district nurses; HCA/secretary; heart failure nurse; heart failure nurse; OT; clinical psychologist; pharmacist; psychologist; quit smoking advisor, specialist registrar, psychologist, pharmacist, two x medical students; rehab support workers; resp cons on case by case basis; respiratory OT; smoking cessation officer; and there are meetings in the acute trust and separate proactive care meetings in the community.

**Comprised: twice a week; quarterly; bi-monthly; as required monthly +; ad hoc; and two monthly.

Access to lung volume reduction (LVR) therapies

Table 5.12	National audit (n=198)							
	Yes – in the unit		Yes – in the regional centre		No		Not stated	
Do patients in your unit have access to lung volume reduction therapies (LVR)?	10%	19	80%	158	7%	13	4%	8
	Yes		No		Not stated			
If yes (n=177), are they discussed at a LVR MDT?	36%	63	38%	68	26%	46		

Access to home NIV services

Table 5.13	National audit (n=198)		
	Yes	No	Not stated
Do patients in your unit have access to home NIV services?			
Yes – via our own unit	43%		86
Yes – via the regional centre only	43%		86
Yes – via other provider	7%		14
No	4%		7
Not stated	3%		5
If yes (n=186), how are patients supported?			
Supported by the unit	68%		126
Supported by a community COPD team	27%		50
Support from an integrated pathway between the unit and community	14%		26
Support from other provider	31%		58
Not stated	2%		3

Sessional consultant time for developing integrated COPD care

Table 5.14	National audit (n=198)					
	Yes		No		Not stated	
Is there sessional consultant time provided for developing integrated COPD care?	27%	54	66%	131	7%	13

Designated individual for developing integrated respiratory care

Table 5.15	National audit (n=198)					
	Yes		No		Not stated	
Is there a designated individual responsible for developing integrated respiratory care?	51%	100	41%	81	9%	17

Local respiratory interest group

Table 5.16	National audit (n=198)					
	Yes		No		Not stated	
Is there a local respiratory interest group?	73%	145	18%	35	9%	18
If yes (n=145), does the respiratory interest group have representation from primary and secondary care?	86%	125	10%	14	4%	6

Agreed integrated care pathway for managing COPD locally

Table 5.17	National audit (n=198)					
	Yes		No		Not stated	
Is there an agreed integrated care pathway for managing COPD locally?	60%	119	31%	62	9%	17

Local CCGs served

Table 5.18	National audit (n=198)		
How many local CCGs does your unit serve?			
	Zero	3%	6
	One	24%	48
	Two	22%	44
	Three	18%	36
	Four	8%	16
	Five or more	7%	14
	Not stated	17%	34

Table 5.19	National audit (n=198)					
	Yes		No		Not stated	
Is there a respiratory consultant or respiratory-interested GP representing respiratory medicine within your CCG?						
	58%	114	20%	40	22%	44

Respiratory CQUINs

Table 5.20	National audit (n=198)					
	Yes		No		Not stated	
Are respiratory CQUINs in use locally as a driver to improve care for COPD patients?						
	55%	109	36%	71	9%	18
If yes (n=109), for what?						
	Smoking cessation	45%	49			
	Use of discharge bundle	67%	73			
	Introducing tele-health	13%	14			
	Respiratory patients care for in respiratory unit	22%	24			
	Other*	15%	16			

*Comprised: advance care planning; advancing quality; advancing quality acute management of COPD; advancing quality admission and discharge; augmenting provision of admission avoidance and pulmonary rehab; collaborative care planning for COPD; COPD admission care bundle; COPD admission care bundle, CQUIN to start April 2014; end-of-life support; inhaler technique; minimising non-elective admissions; NIV; patient passport; personalised COPD care plan; and pulmonary rehabilitation.

Access to hospital spirometry results

Table 5.21	National audit (n=198)					
	Yes		No		Not stated	
Is there an ICT system that provides access to available hospital spirometry results?						
	34%	68	61%	120	5%	10

Access to GP spirometry results

Table 5.22	National audit (n=198)					
	Yes		No		Not stated	
Is there an ICT system that provides access to available GP spirometry results, eg EMIS Web/Orion?						
	6%	11	84%	167	10%	20

Section 6: Organisational score

KEY FINDINGS

- There is a wide spread of organisational achievement, ranging across the spectrum of COPD care.
- Units achieve green status (ie all features met) most frequently for the management of respiratory failure (ie NIV and oxygen therapy).

Improvement planning

- The organisational score provides a snapshot of a unit’s attainment across the domains.
- The score shows where improvements may be necessary.
- Organisational scores should be discussed locally but also regionally.
- Suggestions for improvement should be shared within these meetings.
- The National COPD Audit Programme team would be pleased to receive examples of how any improvements are planned, to pass on and share with others.
- The National COPD Audit Programme team plans to develop an improvement programme across its workstreams.

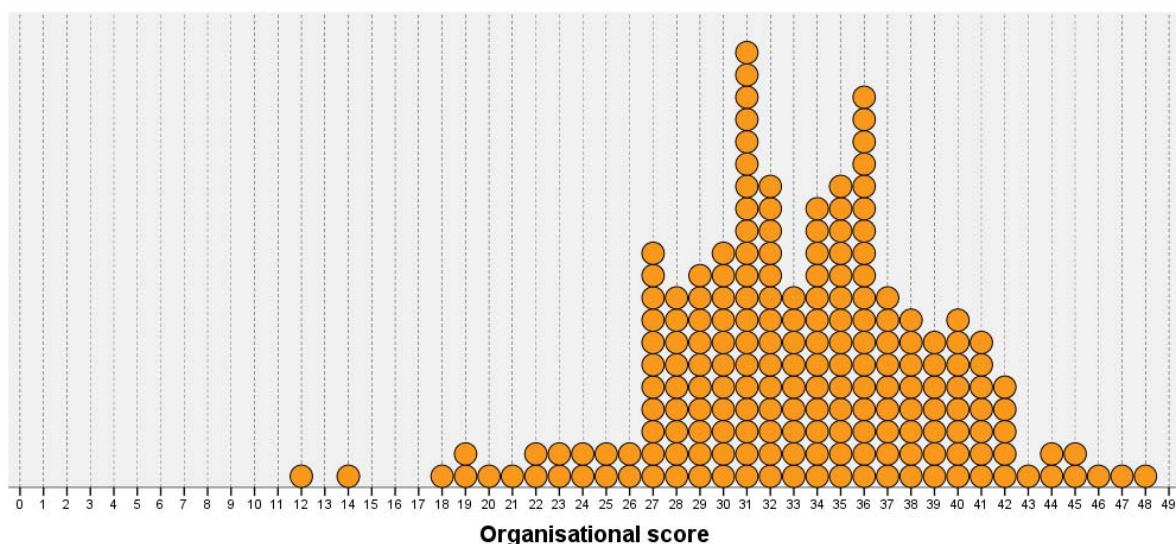
Organisational score and red flags

A scoring system has been developed for units to compare their organisation of care with that of other units. The algorithms for computing these scores are given in **Appendix B**. It must be appreciated that this is a novel approach. Where a unit has not supplied data, it scores zero points. The total score of a handful of units is much affected by this, as demonstrated in the far-right column of table 6.8. We have also highlighted within the table, using an associated key, those units that appear not to be providing what we would consider to be ‘red-flag’ services derived from information they submitted at the time of the audit.

In brief: the organisation of care score is the sum of five domain scores and an extra items score. It can range from 0 (the worst score) to 51 (the best possible score).

Table 6.1 OVERALL SCORE	2014 audit	
	Median	IQR

Organisation of care	33	30–37
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Component scores: red=no feature, green=all features

Domain 1: Senior review on admission (0–6)

Table 6.2	Score						
	0	1	2	3	4	5	6
No. of units	2	7	54	25	82	5	23
% of units	1	4	27	13	41	3	12

Domain 2: Access to specialist care (0–14)

Table 6.3	Score														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
No. of units	3	2	7	23	52	31	28	16	7	8	8	6	3	4	-
% of units	2	1	4	12	26	16	14	8	4	4	4	3	2	2	-

Domain 3: NIV (0–6)

Table 6.4	Score			
	0	2	4	6
No. of units	3	5	27	163
% of units	2	3	14	82

Domain 4: Managing respiratory failure, oxygen therapy (0–8)

Table 6.5	Score								
	0	1	2	3	4	5	6	7	8
No. of units	3	1	-	1	5	18	63	12	95
% of units	2	0.5	-	0.5	3	9	32	6	48

Domain 5: Integrating care across primary and secondary care (0–9)

Table 6.6	Score									
	0	1	2	3	4	5	6	7	8	9
No. of units	6	1	13	20	35	34	30	29	15	15
% of units	3	0.5	7	10	18	17	15	15	8	8

Extra items score (0–8)

Table 6.7	Score				
	0	2	4	6	8
No. of units	1	1	25	71	100
% of units	0.5	0.5	13	36	51

Individual unit organisational scores: red=no feature, green=all features

Please note that units achieving the same score are grouped in alphabetical order.

Missing data score zero points, which much affected the total score of a handful of units that did not provide the requisite data. Total points to be gained if missing data were available are set out in the far-right column of the table below.

Specific red-flag alerts have been issued in the first column; please refer to the explanations below the tables if any apply to your organisation.

Scores and alerts are based on information supplied by your organisation at the time of audit.

Table 6.8

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
RF4	Royal Devon and Exeter Hospital – Wexford	Royal Devon and Exeter NHS Foundation Trust	6	12	6	8	8	8	48	0
	Norfolk and Norwich University Hospital	Norfolk and Norwich University Hospitals NHS Foundation Trust	6	13	6	8	6	8	47	0
	Birmingham Heartlands Hospital	Heart of England NHS Foundation Trust	6	13	6	6	7	8	46	2
	Southampton General Hospital	University Hospital Southampton NHS Foundation Trust	4	10	6	8	9	8	45	0
	St James's University Hospital	The Leeds Teaching Hospitals NHS Trust	6	12	6	8	5	8	45	2
	Homerton Hospital	Homerton University Hospital NHS Foundation Trust	6	7	6	8	9	8	44	2
	The James Cook University Hospital	South Tees Hospitals NHS Foundation Trust	4	11	6	8	7	8	44	0
	Queen's Hospital	Barking Havering and Redbridge University Hospitals NHS Trust	4	13	6	8	4	8	43	1
	King's College Hospital	King's College Hospital NHS Foundation Trust	4	9	6	8	7	8	42	0
RF9	Luton and Dunstable Hospital	Luton and Dunstable Hospital NHS Foundation Trust	5	10	6	6	7	8	42	0
	Pinderfields Hospital	The Mid Yorkshire Hospitals NHS Trust	3	9	6	8	8	8	42	0
	Poole Hospital	Poole Hospital NHS Foundation Trust	4	10	6	8	8	6	42	0
	Queen Alexandra Hospital	Portsmouth Hospitals NHS Trust	4	12	6	8	6	6	42	0
	Basildon University Hospital	Basildon and Thurrock University Hospital NHS Foundation Trust	4	9	6	8	8	6	41	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
	Kettering General Hospital	Kettering General Hospital NHS Foundation Trust	4	8	6	8	9	6	41	0
	New Cross Hospital	The Royal Wolverhampton Hospitals NHS Trust	3	7	6	8	9	8	41	0
	Northern General Hospital	Sheffield Teaching Hospitals NHS Foundation Trust	3	11	6	8	7	6	41	0
	Royal Liverpool University Hospital	Royal Liverpool and Broadgreen University Hospitals NHS Trust	4	8	6	8	7	8	41	0
	Southern General Hospital	Southern General Hospital NHS Foundation Trust	4	6	6	8	9	8	41	0
	West Suffolk Hospital	West Suffolk NHS Foundation Trust	6	8	6	6	7	8	41	0
RF7	Bristol Royal Infirmary	University Hospitals Bristol NHS Foundation Trust	3	10	6	6	9	6	40	0
	Medway Maritime Hospital	Medway NHS Foundation Trust	2	7	6	8	9	8	40	0
	Northwick Park Hospital	North West London Hospitals NHS Trust	4	5	6	8	9	8	40	0
	Royal Free Hospital	Royal Free London NHS Foundation Trust	6	7	6	6	7	8	40	0
	Royal London Hospital	Barts Health NHS Trust	4	13	4	6	7	6	40	3
	Sunderland Royal Hospital	City Hospitals Sunderland NHS Foundation Trust	4	11	2	7	8	8	40	0
	Torbay Hospital	South Devon Healthcare NHS Foundation Trust	6	4	6	8	8	8	40	0
	Whittington Hospital	The Whittington Hospital NHS Trust	4	7	6	8	7	8	40	0
	North Manchester General Hospital	The Pennine Acute Hospitals NHS Trust	3	5	6	8	9	8	39	0
	Royal Blackburn Hospital	East Lancashire Hospitals NHS Trust	4	7	6	8	8	6	39	0
	Royal Derby Hospital	Derby Hospitals NHS Foundation Trust	4	10	6	8	5	6	39	0
RF9	Russells Hall Hospital	The Dudley Group of Hospitals NHS Foundation Trust	2	11	6	5	7	8	39	0
RF7	Salford Royal Hospital	Salford Royal NHS Foundation Trust	6	6	6	8	7	6	39	0
	St George's Hospital	St George's Healthcare NHS Trust	6	7	6	6	6	8	39	3
	Whiston Hospital	St Helens and Knowsley Teaching Hospitals NHS Trust	2	6	6	8	9	8	39	0
	Barnet Hospital	Barnet and Chase Farm Hospitals NHS Trust	6	4	6	7	7	8	38	2
	Croydon University Hospital	Croydon Health Services NHS Trust	3	4	6	8	9	8	38	0
	Harrrogate District Hospital	Harrrogate and District NHS Foundation Trust	4	7	6	8	5	8	38	0
	Hull Royal Infirmary/Castle Hill Hospital	Hull and East Yorkshire Hospitals NHS Trust	4	10	6	6	6	6	38	0
	Kings Mill Hospital	Sherwood Forest Hospitals NHS Foundation Trust	6	7	4	8	5	8	38	4
	Rotherham Hospital	The Rotherham NHS Foundation Trust	4	8	6	6	8	6	38	0
	Royal Bolton Hospital	Bolton NHS Foundation Trust	2	10	6	6	6	8	38	0
	The Royal Bournemouth Hospital	The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	6	8	4	6	8	6	38	0
	Addenbrooke's Hospital	Cambridge University Hospitals NHS Foundation Trust	2	9	6	8	4	8	37	6

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
RF5	City General Hospital	University Hospital of North Staffordshire NHS Trust	6	9	6	6	6	4	37	2
	City Hospital	Sandwell and West Birmingham Hospitals NHS Trust	4	5	6	7	7	8	37	2
	Ealing Hospital	Ealing Hospital NHS Trust	4	6	6	8	5	8	37	0
	Gloucestershire Royal Hospital	Gloucestershire Hospitals NHS Foundation Trust	2	11	4	8	4	8	37	0
	Ipswich Hospital	Ipswich Hospital NHS Trust	4	7	6	8	6	6	37	0
RF3	Leighton Hospital	Mid Cheshire Hospitals NHS Foundation Trust	3	3	6	8	9	8	37	0
RF4	University College Hospital	University College London Hospitals NHS Foundation Trust	6	4	6	6	7	8	37	3
RF10	University Hospital Aintree	Aintree University Hospitals NHS Foundation Trust	4	9	6	4	6	8	37	2
	Bradford Royal Infirmary	Bradford Teaching Hospitals NHS Foundation Trust	4	4	6	8	6	8	36	2
	Darent Valley Hospital	Dartford and Gravesham NHS Trust	4	5	6	6	7	8	36	0
	Dewsbury and District Hospital	The Mid Yorkshire Hospitals NHS Trust	4	7	4	8	7	6	36	2
	East Surrey Hospital	Surrey and Sussex Healthcare NHS Trust	4	6	6	8	4	8	36	1
RF9	Macclesfield District General Hospital	East Cheshire NHS Trust	4	8	6	4	8	6	36	1
	Milton Keynes Hospital	Milton Keynes Hospital NHS Foundation Trust	4	4	6	8	6	8	36	0
	North Middlesex University Hospital	North Middlesex University Hospital NHS Trust	2	5	6	8	7	8	36	0
	Nottingham City Hospital	Nottingham University Hospitals NHS Trust	4	11	6	8	3	4	36	0
	Queen Elizabeth Hospital	Lewisham and Greenwich NHS Trust	2	4	6	8	8	8	36	0
	Royal Surrey County Hospital	Royal Surrey County Hospital NHS Foundation Trust	2	6	6	8	6	8	36	2
	St Peter's Hospital	Ashford and St Peter's Hospitals NHS Foundation Trust	4	6	6	8	6	6	36	0
	St Richard's Hospital	Western Sussex Hospitals NHS Trust	2	6	6	8	6	8	36	0
	Stafford Hospital	Mid Staffordshire NHS Foundation Trust	2	5	6	8	7	8	36	0
RF9	The Royal Oldham Hospital	The Pennine Acute Hospitals NHS Trust	4	5	6	6	7	8	36	0
RF7	University Hospital of North Tees	North Tees and Hartlepool NHS Foundation Trust	6	4	6	8	6	6	36	0
	University Hospital of Wales	Cardiff and Vale University Health Board	3	7	6	8	4	8	36	0
RF4	Wansbeck General Hospital	Northumbria Healthcare NHS Foundation Trust	4	4	6	8	6	8	36	0
	Warwick Hospital	South Warwickshire General Hospitals NHS Trust	5	5	6	8	6	6	36	0
	Arrowe Park Hospital	Wirral University Teaching Hospital NHS Foundation Trust	5	5	6	6	5	8	35	4
	Barnsley Hospital	Barnsley Hospital NHS Foundation Trust	4	5	6	5	7	8	35	0
	Chelsea and Westminster Hospital	Chelsea and Westminster Hospital NHS Foundation Trust	4	4	6	8	5	8	35	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
RF7	Frenchay Hospital/Southmead Hospital Bristol	North Bristol NHS Trust	4	5	6	8	8	4	35	0
	Frimley Park Hospital	Frimley Park Hospital NHS Foundation Trust	4	6	6	8	3	8	35	0
	Hillingdon Hospital	The Hillingdon Hospitals NHS Foundation Trust	4	5	4	6	8	8	35	2
	James Paget University Hospital	James Paget University Hospitals NHS Foundation Trust	4	6	6	7	4	8	35	0
	Northampton General Hospital	Northampton General Hospital NHS Trust	4	4	6	8	7	6	35	0
	Oxford University Hospitals (John Radcliffe Hospital, Churchill Hospital and Horton General Hospital)	Oxford University Hospitals NHS Trust	4	9	6	5	5	6	35	2
	Royal Gwent Hospital	Aneurin Bevan University Health Board	4	4	6	6	9	6	35	2
	Royal United Hospital	Royal United Hospital Bath NHS Trust	4	4	6	8	5	8	35	4
	Stoke Mandeville Hospital	Buckinghamshire Healthcare NHS Trust	2	6	6	8	5	8	35	0
	West Middlesex University Hospital	West Middlesex University Hospital NHS Trust	4	4	6	8	5	8	35	0
	Wythenshawe Hospital	University Hospital of South Manchester NHS Foundation Trust	4	10	4	5	6	6	35	2
	Bedford Hospital	Bedford Hospital NHS Trust	4	5	2	8	7	8	34	0
RF5, RF7	Derriford Hospital	Plymouth Hospitals NHS Trust	6	4	6	6	8	4	34	2
RF3	Llandough Hospital	Cardiff and Vale University Health Board	4	4	6	8	4	8	34	1
	Manchester Royal Infirmary	Central Manchester/Manchester Children's University Hospital NHS Trust	3	5	6	6	6	8	34	0
	Royal Sussex County Hospital	Brighton and Sussex University Hospitals NHS Trust	2	5	6	8	5	8	34	0
	Salisbury District Hospital	Salisbury NHS Foundation Trust	4	4	6	8	4	8	34	4
	South Tyneside District Hospital	South Tyneside NHS Foundation Trust	4	4	6	6	8	6	34	0
RF7	St Helier Hospital	Epsom and St Helier University Hospitals NHS Trust	3	6	6	8	5	6	34	1
	The Countess of Chester Hospital	Countess of Chester Hospital NHS Foundation Trust	4	6	6	5	5	8	34	0
	The Princess Royal Hospital	The Shrewsbury and Telford Hospital NHS Trust	6	4	6	8	4	6	34	2
	University Hospital	University Hospitals Coventry and Warwickshire NHS Trust	2	9	6	6	3	8	34	0
	Victoria Hospital	Blackpool Teaching Hospitals NHS Foundation Trust	2	4	6	8	6	8	34	2
	Whipps Cross University Hospital	Barts Health NHS Trust	3	6	6	6	5	8	34	2
	Broomfield Hospital	Mid-Essex Hospital Services NHS Trust	3	3	6	8	5	8	33	2
	Epsom Hospital	Epsom and St Helier University Hospitals NHS Trust	2	7	4	8	6	6	33	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
RF9	Freeman Hospital/Royal Victoria Infirmary	The Newcastle upon Tyne Hospitals NHS Foundation Trust	2	5	6	5	7	8	33	0
	George Eliot Hospital	George Eliot Hospital NHS Trust	1	6	6	8	4	8	33	0
	Glenfield Hospital	University Hospitals of Leicester NHS Trust	2	8	6	5	4	8	33	4
RF3	Grantham and District Hospital	United Lincolnshire Hospitals NHS Trust	4	4	6	8	5	6	33	0
	Royal Lancaster Infirmary	University Hospitals of Morecambe Bay NHS Foundation Trust	2	5	6	6	6	8	33	0
	The Princess Royal University Hospital	Kings College Hospital NHS Foundation Trust	2	6	6	8	3	8	33	2
	Tunbridge Wells Hospital	Maidstone and Tunbridge Wells NHS Trust	3	5	6	7	4	8	33	0
	Charing Cross Hospital	Imperial College Healthcare NHS Trust	4	6	6	8	4	4	32	2
	Eastbourne District General Hospital	East Sussex Hospitals NHS Trust	2	4	6	7	5	8	32	0
RF7	Fairfield General Hospital	The Pennine Acute Hospitals NHS Trust	4	2	6	8	6	6	32	0
RF3	Hexham General Hospital	Northumbria Healthcare NHS Foundation Trust	4	3	6	8	3	8	32	2
	Nevill Hall Hospital	Aneurin Bevan University Health Board	4	2	6	6	6	8	32	2
	Queen Elizabeth The Queen Mother Hospital	East Kent Hospitals University NHS Foundation Trust	2	6	6	6	4	8	32	2
	Queen's Hospital – Burton	Burton Hospitals NHS Foundation Trust	4	2	6	8	6	6	32	1
	Royal Berkshire Hospital	Royal Berkshire NHS Foundation Trust	2	5	4	8	5	8	32	2
	St Thomas' Hospital	Guy's and St Thomas' NHS Foundation Trust	1	5	6	5	7	8	32	0
	Warrington Hospital	Warrington and Halton Hospitals NHS Foundation Trust	3	4	6	6	9	4	32	0
RF3	Weston General Hospital	Weston Area Health NHS Trust	5	4	4	6	7	6	32	0
	William Harvey Hospital	East Kent Hospitals University NHS Foundation Trust	2	6	6	6	4	8	32	0
	Worcestershire Royal Hospital	Worcestershire Acute Hospitals NHS Trust	2	3	6	6	7	8	32	0
	Yeovil District Hospital	Yeovil District Hospital NHS Foundation Trust	6	3	4	8	3	8	32	0
	Basingstoke and North Hampshire Hospital	Hampshire Hospitals NHS Foundation Trust	4	3	6	5	5	8	31	2
RF3	Calderdale Royal Hospital	Calderdale and Huddersfield NHS Foundation Trust	2	5	6	8	4	6	31	0
	Cheltenham General Hospital	Gloucestershire Hospitals NHS Foundation Trust	2	7	2	8	4	8	31	0
RF4	Colchester General Hospital	Colchester Hospital University NHS Foundation Trust	2	4	6	6	7	6	31	0
	Cumberland Infirmary	North Cumbria Acute Hospitals NHS Trust	2	4	6	8	5	6	31	0
RF9	Diana Princess of Wales Hospital	Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	6	4	6	6	5	4	31	0
	Hereford County Hospital	Wye Valley NHS Trust	4	4	6	8	3	6	31	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
	Kent and Canterbury Hospital	East Kent Hospitals University NHS Foundation Trust	2	5	6	6	4	8	31	0
	Maidstone Hospital	Maidstone and Tunbridge Wells NHS Trust	3	3	6	7	4	8	31	0
	Musgrove Park Hospital	Taunton and Somerset NHS Foundation Trust	6	5	4	5	5	6	31	0
	Newham University Hospital	Barts Health NHS Trust	2	3	6	8	4	8	31	2
	Queen Elizabeth Hospital – Birmingham	University Hospital Birmingham NHS Foundation Trust	4	4	6	6	5	6	31	0
	Queen Elizabeth Hospital – Gateshead	Gateshead Health NHS Foundation Trust	2	5	6	6	6	6	31	2
	Royal Cornwall Hospital	Royal Cornwall Hospitals NHS Trust	4	6	6	6	1	8	31	0
	Southport and Formby District General Hospital	Southport and Ormskirk Hospital NHS Trust	2	4	6	8	3	8	31	2
RF4	St Mary's Hospital – Imperial	Imperial College Healthcare NHS Trust	4	4	6	6	5	6	31	2
	St Mary's Hospital – Isle of Wight	Isle of Wight NHS Trust	4	4	6	6	5	6	31	0
RF4	Watford General Hospital	West Hertfordshire Hospitals NHS Trust	2	7	6	3	7	6	31	0
	Wexham Park Hospital	Heatherwood and Wexham Park Hospitals NHS Foundation Trust	4	3	6	6	6	6	31	2
	York Hospital	York Teaching Hospitals NHS Foundation Trust	4	3	6	8	4	6	31	0
RF4	Chorley and South Ribble Hospital	Lancashire Teaching Hospitals NHS Foundation Trust	4	4	6	6	2	8	30	5
RF7	Friarage Hospital	South Tees Hospitals NHS Trust	2	7	6	8	3	4	30	0
RF4	Kingston Hospital	Kingston Hospital NHS Trust	3	4	6	8	3	6	30	3
	Leicester Royal Infirmary	University Hospitals of Leicester NHS Trust	4	6	6	6	2	6	30	0
	North Tyneside General Hospital	Northumbria Healthcare NHS Foundation Trust	4	4	6	8	2	6	30	7
RF7	Prince Philip Hospital	Hywel Dda University Health Board	4	4	6	6	4	6	30	0
	Princess of Wales Hospital	Abertawe Bro Morgannwg University Health Board	3	4	6	8	3	6	30	2
RF9	Royal Albert Edward Infirmary	Wrightington, Wigan and Leigh NHS Foundation Trust	4	6	6	1	5	8	30	4
	Royal Shrewsbury Hospital	The Shrewsbury and Telford Hospital NHS Trust	4	4	6	7	3	6	30	0
	Scarborough General Hospital	York Teaching Hospitals NHS Foundation Trust	3	6	6	6	5	4	30	0
	The Great Western Hospital	Great Western Hospitals NHS Foundation Trust	2	4	6	6	4	8	30	2
	Bronglais General Hospital	Hywel Dda University Health Board	4	5	6	6	2	6	29	4
RF7	Chesterfield Royal Hospital	Chesterfield Royal Hospital NHS Foundation Trust	2	5	6	8	2	6	29	1
	East and North Hertfordshire NHS Trust	East and North Hertfordshire NHS Trust	4	4	6	7	2	6	29	0
	Glan Clwyd Hospital	Betsi Cadwaladr University Health Board	4	4	6	6	3	6	29	0
	Hinchingbrooke Hospital	Hinchingbrooke Health Care NHS Trust	2	3	6	8	4	6	29	2
	Lewisham Hospital	Lewisham and Greenwich NHS Trust	2	4	4	6	5	8	29	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
	Manor Hospital	Walsall Hospitals NHS Trust	5	5	2	6	3	8	29	0
	Prince Charles Hospital	Cwm Taf Health Board	4	6	6	7	0	6	29	4
RF3, RF7	Trafford General Hospital	Central Manchester/Manchester Children's University Hospital NHS Trust	4	4	6	6	3	6	29	0
RF7	Withybush General Hospital	Hywel Dda University Health Board	4	3	6	7	5	4	29	4
	Alexandra Hospital	Worcestershire Acute Hospitals NHS Trust	3	1	4	8	4	8	28	6
RF7	Darlington Memorial Hospital	County Durham and Darlington NHS Foundation Trust	4	6	4	6	4	4	28	0
	Good Hope Hospital	Heart of England NHS Foundation Trust	2	4	6	6	4	6	28	2
	Hammersmith Hospital	Imperial College Healthcare NHS Trust	6	0	6	8	4	4	28	15
RF9	Huddersfield Royal Infirmary	Calderdale and Huddersfield NHS Foundation Trust	2	3	6	6	5	6	28	2
RF9	Lincoln County Hospital	United Lincolnshire Hospitals NHS Trust	2	3	6	4	5	8	28	1
RF4	Queens Medical Centre Nottingham	Nottingham University Hospitals NHS Trust	3	6	6	5	2	6	28	1
RF9	Scunthorpe General Hospital	Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	4	3	6	0	9	6	28	1
	Worthing Hospital	Western Sussex Hospitals NHS Trust	1	3	6	6	6	6	28	2
	Central Middlesex Hospital	North West London Hospitals NHS Trust	3	2	4	6	6	6	27	0
RF9	Doncaster Royal Infirmary	Doncaster and Bassetlaw Hospitals NHS Foundation Trust	2	4	6	5	6	4	27	0
	Dorset County Hospital	Dorset County Hospital NHS Foundation Trust	2	1	4	8	6	6	27	1
RF5, RF9	Peterborough City Hospital	Peterborough and Stamford Hospitals NHS Foundation Trust	3	4	6	4	4	6	27	2
RF7	Royal Hampshire County Hospital	Hampshire Hospitals NHS Foundation Trust	2	5	6	7	3	4	27	2
RF3	Solihull Hospital	Heart of England NHS Foundation Trust	2	5	6	5	3	6	27	4
	Tameside General Hospital	Tameside and Glossop Acute Services NHS Trust	4	3	4	8	2	6	27	1
	The Queen Elizabeth Hospital	The Queen Elizabeth Hospital King's Lynn NHS Trust	2	5	6	8	2	4	27	0
RF7	University Hospital North Durham	County Durham and Darlington NHS Foundation Trust	1	6	4	6	4	6	27	0
	West Cumberland Hospital	North Cumbria Acute Hospitals NHS Trust	2	2	6	8	3	6	27	1
	Wrexham Maelor Hospital	Betsi Cadwaladr University Health Board	4	3	6	6	4	4	27	3
RF7	North Devon District Hospital	Northern Devon Healthcare NHS Trust	2	3	4	8	5	4	26	0
	Royal Preston Hospital	Lancashire Teaching Hospitals NHS Foundation Trust	4	2	6	5	5	4	26	2
RF9	Airedale General Hospital	Airedale NHS Foundation Trust	2	4	4	4	3	8	25	0
	Princess Alexandra Hospital	The Princess Alexandra Hospital NHS Trust	2	3	6	6	4	4	25	0
RF7	Furness General Hospital	University Hospitals of Morecambe Bay NHS Foundation Trust	2	4	6	6	2	4	24	0

Red-flag alert – see relevant footnote as applicable	Unit	Trust/health board	D1 score Senior review on admission	D2 score Access to specialist care	D3 score NIV	D4 score Managing respiratory failure, oxygen therapy	D5 score Integrating care across primary and secondary sectors	Extra items score	Total organisational score	Extra points that could be gained if missing data were available
RF7	Stepping Hill Hospital	Stockport NHS Foundation Trust	2	4	4	6	4	4	24	0
	Royal Glamorgan Hospital	Cwm Taf University Health Board	3	3	6	5	0	6	23	0
RF7	Ysbyty Gwynedd	Betsi Cadwaladr University Health Board	3	2	6	8	2	2	23	2
	Morrison Hospital	Abertawe Bro Morgannwg University Health Board	1	4	4	5	2	6	22	0
RF7	West Wales General Hospital	Hywel Dda University Health Board	2	4	2	6	4	4	22	4
RF3	Singleton Hospital	Abertawe Bro Morgannwg University Health Board	1	3	4	5	2	6	21	0
RF4, RF6, RF8	Bassetlaw Hospital	Doncaster and Bassetlaw Hospitals NHS Foundation Trust	1	5	4	6	0	4	20	11
RF4, RF6, RF8, RF9	Conquest Hospital	East Sussex Hospitals NHS Trust	0	6	4	5	4	0	19	8
RF1, RF3, RF7	Ysbyty Ystrad Fawr	Aneurin Bevan University Health Board	3	3	0	6	3	4	19	0
RF6	Princess Royal Hospital	Brighton and Sussex University Hospitals NHS Trust	0	4	4	6	0	4	18	9
RF2, RF10	Pilgrim Hospital	United Lincolnshire Hospitals NHS Trust	6	0	0	0	0	8	14	32
RF2, RF10	Sandwell General Hospital	Sandwell and West Birmingham Hospitals NHS Trust	4	0	0	0	0	8	12	32

Key to red-flag alerts

- RF1:** units with NIV not available (Q3.2)
- RF2:** units with missing data as to NIV being available (Q3.2)
- RF3:** units with no general operational ITU beds suitable for COPD patients (Q1.13)
- RF4:** units with missing data as to the number of general operational ITU beds suitable for COPD patients (Q1.13)
- RF5:** units not using a system of early warning detection (Q1.14)
- RF6:** units with missing data as to having a system of early warning detection (Q1.14)
- RF7:** units without an ICU outreach service for critically ill cases requiring ICU management (Q1.15)
- RF8:** units with missing data as to having an ICU outreach service for critically ill cases requiring ICU management (Q1.15)
- RF9:** units whose medication chart/record has no designated place in which to prescribe oxygen (Q4.3)
- RF10:** units with missing data as to whether the medication chart/record has no designated place in which to prescribe oxygen (Q4.3)

Note that these red-flag alerts are based on information submitted by organisations at the time of the audit.

3. Acknowledgements

We would like to thank the many individuals who have contributed to the development of the methodology and questions for the national COPD secondary care audit 2014. We consulted widely and received extremely helpful, enthusiastic input from colleagues and patient representatives, all of which was considered by the audit team prior to the refinement of the audit questions and online audit tool.

We are particularly indebted to members of the secondary care audit workstream group, who unreservedly gave the project team direction, support and the benefit of their expert opinions:

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- Dr John Hurst, Consultant and Senior Clinical Lecturer, UCL Medical School
- Dr Gill Lowrey, Consultant Respiratory Physician, Royal Derby Hospital
- Mr Mike McKeivitt, British Lung Foundation
- Ms Sam Prigmore, Respiratory Nurse Consultant, St George's Hospital, London
- Dr Louise Restrick, Consultant Respiratory Physician, Whittington Hospital, London
- Dr Georgina Russell, Clinical Fellow, RCP, London
- Professor Michael Steiner, Glenfield Hospital Leicester
- Ms Catherine Thompson, Head of Patient Experience for Acute Services, NHS England
- Dr Penny Woods, British Lung Foundation

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Finally, thanks are extended to HQIP, commissioners of the National COPD Audit Programme, of which the secondary care organisation audit 2014 forms a part.

4. Appendices

- **Appendix A:** Audit methodology
 - Recruitment
 - Development of the audit questions
 - Definitions
 - Information governance
 - Data collection period
 - Data collection
 - Telephone and email support

- **Appendix B:** National COPD audit 2014 – organisational scoring algorithms

- **Appendix C:** Participating NHS acute units

- **Appendix D:** BTS online audit tool

- **Appendix E:** National COPD Audit Programme governance
 - National COPD Audit Programme board members
 - National COPD Audit Programme steering group members
 - National COPD Audit Programme secondary care workstream group

- **Appendix F:** NICE COPD Quality Standards (2011)

- **Appendix G:** Glossary of terms and abbreviations

- **Appendix H:** References

Appendix A: Audit methodology

The secondary care audit 2014 built on the previous audits of COPD care undertaken in 1997, 2003 and 2008. It comprised two distinct elements:

- an audit of all cases of acute COPD exacerbations admitted to units in England and Wales between 1 February and 30 April 2014
- a snapshot audit of the resourcing and organisation of COPD services at these units during the period of clinical case ascertainment.

The 2014 national COPD secondary care audit differed from previous audits in scope and size. Firstly, the audit was commissioned by HQIP as part of the National Clinical Audit Programme (NCA) for England and Wales; therefore it did not cover the whole of the UK as in previous audits. Secondly, to achieve sufficient case numbers for meaningful site comparisons, participating units were instructed to audit all eligible cases of acute COPD exacerbation (AECOPD) admitted between 1 February and 30 April 2014, rather than a fixed sample (up to 60 cases) as occurred in 2008. As in previous years, the second element of the audit comprised a comprehensive survey of the resourcing and organisation of care at the units admitting patients with AECOPD.

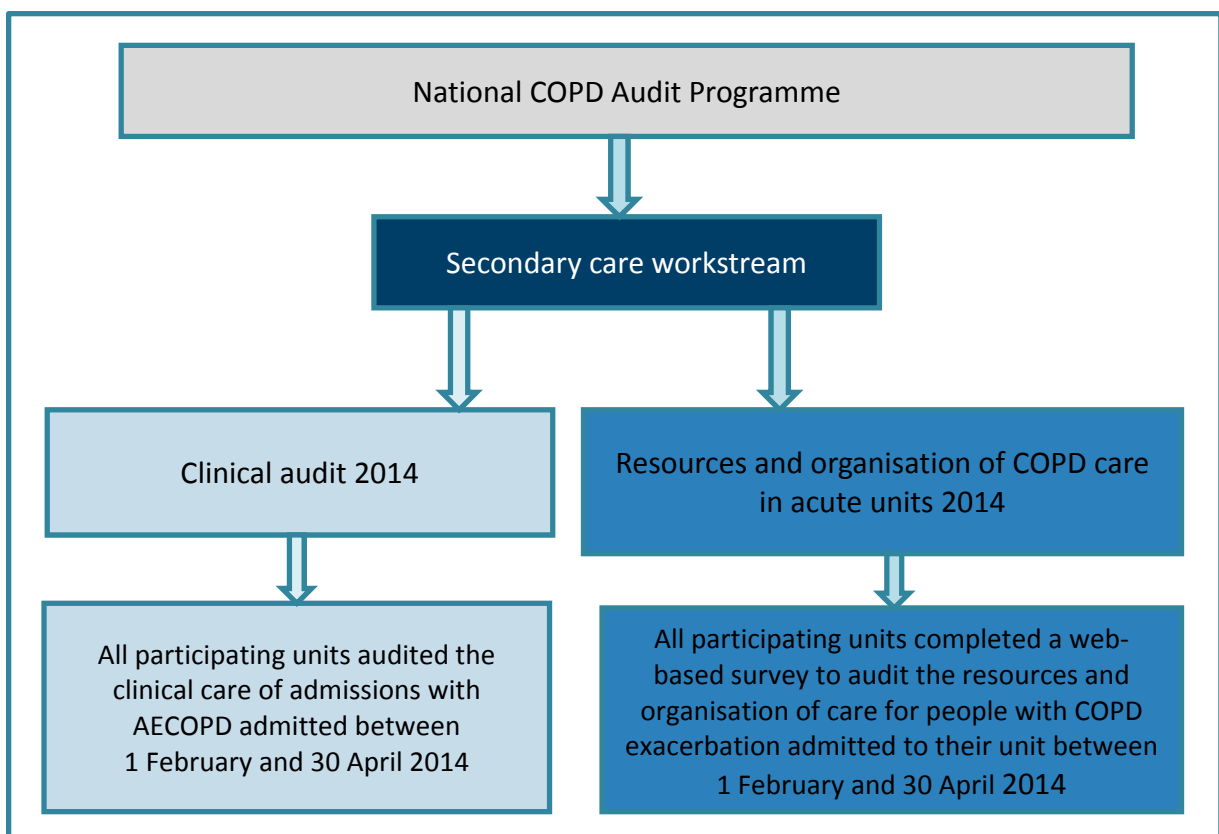


Fig 1: National Secondary Care COPD Audit methodology

Recruitment

Efforts to raise awareness and ensure a high participation rate began in early 2013, ie a year before the data collection period. The audit was promoted via the RCP and BTS websites, flyers were distributed at specialist conferences, and information was disseminated widely to respiratory colleagues via global emails from the BTS. A letter was sent to the chief executive officers and medical directors of all NHS acute trusts / health boards in November 2013, requesting the support

of both respiratory and clinical audit colleagues and reminding them that the National COPD Audit Programme forms part of their trust's quality accounts. The letter outlined plans for the forthcoming audit and sought 'registration' via a short form identifying two local lead contacts.

Concerted efforts were made throughout December 2013 and January 2014 to contact individuals at trusts health boards that had not yet registered, until 100% of eligible trusts / health boards and units were confirmed participants. Subsequently, 99% of registered units submitted data for the organisational audit (148/149 trusts / health boards, 199/201 units).

Development of the audit questions

The organisational and clinical datasets were developed by the secondary care workstream group, in consultation with COPD experts across England and Wales. Copies of both datasets are available to download from the programme website: www.rcplondon.ac.uk/COPD. The datasets take account of recent changes in the NHS structure, the new NHS domains and more recently published COPD quality standards from NICE.

A scoping exercise was undertaken by the workstream group to determine the key interventions, processes and resources from which the questions should be drawn. Questions were ordered broadly around several domains of care, to ensure that general data were collected but also information about specific areas including the admissions process, the application of specialist care, management of respiratory failure, the management of discharge and integration of care. The group ensured that the questions mapped to existing standards and the five NHS domains.

A consultation exercise was then undertaken, the datasets being sent to the NHS COPD leads and individual COPD specialists within NHS trusts / health boards in England and Wales. Further feedback on the organisational dataset was invited as part of the clinical dataset pilot that took place in September 2013. Subsequent modifications were made to both datasets, including a significant reduction in length. The pilot also led to improvements in the functionality of the online web tool.

Definitions

'Unit'

- The term 'unit' was used to describe each organisation that participated in the audit. For the purposes of the audit, a 'unit' was defined as 'a hospital that admits acute unselected emergency COPD admissions'.
- Trusts with more than one hospital, where acute COPD admissions were being managed separately at each hospital, were encouraged to treat each site as a separate 'unit'. However, there were instances where patients were regularly managed by more than one hospital within a trust, and/or a trust preferred to collect and present its data collectively. In these cases, two or more hospitals entered data as one 'unit' (**Appendix C** shows participating units, and those linked sites preferring to enter data as one unit).

'Admission'

- An admission was defined as 'an episode in which a patient with an acute COPD exacerbation was admitted to a ward and stayed for 4 hours or more (this includes emergency medicine centres, medical admission units, clinical decision units or similar, but excludes accident and emergency units)'. A stay in hospital of less than 4 hours would be classed as a non-admission and would not be included.

Information governance

To enable the collection of patient identifiable data items without obtaining explicit individual patient consent, Section 251 approval was gained via the Confidentiality Advisory Group (CAG). This would allow 30- and 90-day outcome data to be extracted and linked centrally by the Health and Social Care Information Centre (HSCIC) without the need for units to carry out any subsequent notes audit. It also meant that data could be linked across the other National COPD Audit Programme workstreams.

Additionally, to support the flow/transfer of identifiable data from individual units to the National COPD audit team, Caldicott Guardian approval was obtained from each participating unit before access to the online audit web tool was given to local unit staff.

Data collection period

Data submission for the organisational audit took place alongside the clinical audit (1 February to 31 May 2014).

Data collection

Data were collected by local clinical and audit staff at each participating unit.

Data for each element of the national COPD secondary care audit were submitted via the BTS web-based audit data collection system, developed in 2009 by Westcliff Solutions Ltd. The tool was accessible via the BTS website (**Appendix D**).

A number of documents designed to support participation in the audit were posted on the RCP National COPD Audit Programme website (www.rcplondon.ac.uk/projects/secondary-care-workstream), including copies of the audit protocol, data collection instructions, frequently asked questions and the organisational dataset with help notes. Regular email updates were also sent to audit participants throughout the audit period, to encourage them to start collecting data for the organisational audit in advance of the closing date for data entry (31 May 2014).

At the end of the data collection period, the BTS made contact with the units that had records that had not been submitted, to ensure that they were finalised and included in the national dataset. Following the closure of the audit and an initial review of the data by the medical statistician, the BTS contacted units where data were missing or appeared to be incorrect, eg the number of COPD admissions was significantly larger than the total respiratory admissions.

Telephone and email support

The BTS project team provided dedicated support to deal with queries or comments from participants throughout the audit: a telephone helpline was available from Monday to Friday during office hours, and queries could be emailed directly to the BTS project team. Where similar queries were being raised frequently, they were added to the frequently asked questions, or the online help notes were updated as appropriate. Queries were also logged for future learning.

Appendix B: National COPD audit 2014 – organisational scoring algorithms

Domain 1: Senior review on admission

Question 1.18: SCORE RANGE 0–6

- a. 1.18 Senior review on admissions ward – once daily: **Score 1**
b. 1.18 Senior review on admissions ward – twice daily: **Score 2**

Some sites had ‘other’ free-text responses and these were scored thus:

Score 2:

- Three times daily
- There is continuous review with two formal ward rounds for acute admissions

Score 1:

- Rolling ward round
- Ongoing shortly, post-admission
- Continuous presence up to 8.30pm, then 8am
- All admissions continuously reviewed by a consultant 0800-2000 (8am–8pm)

Score 0:

- Not stated

- c. 1.18 Senior review on admissions ward at weekends – once daily: **Score 1**
d. 1.18 Senior review on admissions ward at weekends – twice daily: **Score 2**

Some sites had ‘other’ free-text responses and these were scored thus:

Score 2:

- Three times daily
- Usually four rounds per day up to 8pm, then 8am

Score 1:

- Rolling ward round
- Ongoing shortly, post-admission
- All admissions continuously reviewed by a consultant 0800-2000 (8am–8pm)
- As required
- All patients admitted within 48 hours are reviewed daily
- All admissions seen within 12 hours; other patients on ward seen daily by SHO and by consultant only if ill

Score 0:

- Not stated
- Only if unwell
- Less than daily
- If sick
- If a problem
- As requested

- e. Designated level 2 beds on the respiratory ward: **Score 2** for two or more beds, **Score 1** for one bed, **Score 0** for zero beds.

Domain 2: Access to specialist care

Questions 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.10: SCORE RANGE 0–14

a. 2.3 On-call respiratory consultant available weekdays: **Score 1**

b. 2.3 And weekends: **Score 2**

Some sites had an on-call respiratory consultant available, but did not say when:

Score 1

c. 2.4 On-call respiratory SpR/trainee available: **Score 1**

d. 2.4 And weekends: **Score 2**

There was a mix of questions covering this, first to ask whether specialist care was available every day or weekdays only, then also to ask whether there was a specific rota and when it was available.

Score 2:

- Available every day and yes to specific rota
- Available every day and no to specific rota
- Not available every day/weekdays but has a specific rota every day

Score 1:

- Available weekdays only and yes to specific rota
- Available weekdays only and no to specific rota
- Not available every day/weekdays but has a specific rota on weekdays only

Score 0:

- Not available every day/weekdays but has a specific rota not stated when
- Not available every day/weekdays and no/not known if specific rota

e. 2.5 Senior decision maker from the respiratory team undertakes daily ward round of new COPD patients on the MAU: **Score 1**

f. 2.5 And weekends: **Score 2**

Some sites said yes but did not say when: **Score 1**

g. 2.6 Senior decision maker from the respiratory team undertakes a daily ward round of new COPD patients on the respiratory wards: **Score 1**

h. 2.6 And weekends: **Score 2**

Some sites said yes but did not say when: **Score 1**

i. 2.7 Senior decision maker from the respiratory team undertakes a daily ward round of new COPD patients on other wards: **Score 1**

j. 2.7 And weekends: **Score 2**

Some sites said yes but did not say when: **Score 1**

k. 2.8 Respiratory nurse available to review COPD patients: **Score 1**

l. 2.8 And weekends: **Score 2**

Some sites said yes but did not say when: **Score 1**

m. 2.10 Physiotherapist available to review COPD patients as necessary: **Score 1**

n. 2.10 And weekends: **Score 2**

Some sites said yes but did not say when: **Score 1**

Some sites said yes and other, but we did not ask what other meant: **Score 1**

Domain 3: NIV

Questions 3.1, 3.2, 3.3: SCORE RANGE 0–6

- a. 3.1 Lead clinician responsible for the NIV service: **Score 2**
No/not stated: **Score 0**
- b. 3.2 NIV available: **Score 2**
No/not stated: **Score 0**
- c. 3.3 Training programme available for staff providing NIV: **Score 2**
No/not stated: **Score 0**

Domain 4: Managing respiratory failure, oxygen therapy

Questions 4.1, 4.3, 4.4, 4.5: SCORE RANGE 0–8

- a. 4.1 Oxygen policy in place: **Score 1**
No/not stated: **Score 0**
- b. 4.3 Medication chart/record has dedicated place in which to prescribe oxygen: **Score 2**
No/not stated: **Score 0**
- c. 4.4 Monitoring chart that allows the following to be recorded:
 - i. Target saturation: **Score 1**
No/not stated: **Score 0**
 - ii. Actual saturation: **Score 1**
No/not stated: **Score 0**
 - iii. Amount of oxygen administered: **Score 1**
No/not stated: **Score 0**
- d. 4.5 Oxygen training programme in place: **Score 2**
No/not stated: **Score 0**

Domain 5: Integrating care across primary and secondary care sectors

Questions 5.1, 5.2, 5.5, 5.8: SCORE RANGE 0–9

- a. 5.1 – discharge care bundles used: **Score 1**
No/not stated: **Score 0**
- b. 5.2 Unit has a team that manages early/assisted discharge of patients with COPD?

For the purposes of the score, it does not matter whether the scheme is hospital-based, a community scheme or a fully integrated scheme. We merely need to know whether they have a scheme and if it runs weekdays only or every day. This is based on deriving denominators to sets of 5.2.1 questions, 5.2.2 questions, and 5.2.3 questions.

ANY of the three denominators: **Score 1**
NONE of the denominators: **Score 0**

- c. 5.2 Scheme runs 7 days a week?
Three possible types of scheme covered by 5.2.1, 5.2.2 and 5.2.3, and each has options of being every day, or only weekdays. Some units have more than one scheme, eg hospital-based every day and community-based on weekdays only, and vice versa were also recorded.
- ANY mention of 'every day' **Score 2**, otherwise: **Score 0**
- d. 5.5 Pulmonary rehab scheme available to COPD patients discharged following an exacerbation: **Score 2**
No/not stated: **Score 0**
- e. 5.5 PR available within 4 weeks of discharge: **Score 2**
No/not stated: **Score 0**
- f. 5.8 Regular MDT meeting for patients with COPD: **Score 1**
No/not stated: **Score 0**

Extra items score

Questions 1.14, 1.15, 1.23, 1.24: SCORE RANGE 0–8

- a. 1.14 Unit has a system of early warning detection: **Score 2**
No/not stated: **Score 0**
- b. 1.15 ICU outreach service: **Score 2**
No/not stated: **Score 0**
- c. 1.23 Formal smoking cessation service within the unit: **Score 2**
No/not stated: **Score 0**
- d. 1.24 On-site palliative care service available for COPD patients: **Score 2**
No/not stated: **Score 0**

Overall organisational score

SCORE RANGE 0–51

This is computed as the sum of the five domain scores and the other items score.

Appendix C: Participating NHS acute units

Hospitals that opted to submit data as a single unit are highlighted in blue.

Trust	Unit
Abertawe Bro Morgannwg University Health Board	Singleton Hospital
	Morrison Hospital
	Princess of Wales Hospital
Aintree University Hospitals NHS Foundation Trust	Aintree University Hospital
Airedale NHS Foundation Trust	Airedale General Hospital
Aneurin Bevan University Health Board	Nevill Hall Hospital
	Royal Gwent Hospital
	Ysbyty Ystrad Fawr
Ashford and St Peter's Hospitals NHS Foundation Trust	St Peter's Hospital
Barking, Havering and Redbridge University Hospitals NHS Trust	Queen's Hospital
Barnet and Chase Farm Hospitals NHS Trust	Barnet Hospital
Barnsley Hospital NHS Foundation Trust	Barnsley Hospital
Barts Health NHS Trust	Royal London Hospital
	Newham University Hospital
	Whipps Cross University Hospital
Basildon and Thurrock University Hospitals NHS Foundation Trust	Basildon University Hospital
Bedford Hospital NHS Trust	Bedford Hospital
Betsi Cadwaladr University Health Board	Glan Clwyd Hospital
	Wrexham Maelor Hospital
	Ysbyty Gwynedd
Blackpool Teaching Hospitals NHS Foundation Trust	Blackpool Victoria Hospital
Bolton NHS Foundation Trust	Royal Bolton Hospital
Bradford Teaching Hospitals NHS Foundation Trust	Bradford Royal Infirmary
Brighton and Sussex University Hospitals NHS Trust	Princess Royal Hospital
	Royal Sussex County Hospital
Buckinghamshire Healthcare NHS Trust	Stoke Mandeville Hospital
Burton Hospitals NHS Foundation Trust	Queen's Hospital
Calderdale and Huddersfield NHS Foundation Trust	Calderdale Royal Hospital
	Huddersfield Royal Infirmary
Cambridge University Hospitals NHS Foundation Trust	Addenbrooke's Hospital
Cardiff and Vale University Health Board	Llandough Hospital
	University Hospital of Wales
Central Manchester / Manchester Children's University Hospital NHS Trust	Manchester Royal Infirmary
	Trafford General Hospital

Trust	Unit
Chelsea and Westminster Hospital NHS Foundation Trust	Chelsea and Westminster Hospital
Chesterfield Royal Hospital NHS Foundation Trust	Chesterfield Royal Hospital
City Hospitals Sunderland NHS Foundation Trust	Sunderland Royal Hospital
Colchester Hospital University NHS Foundation Trust	Colchester General Hospital
Countess of Chester Hospital NHS Foundation Trust	Countess of Chester Hospital
County Durham and Darlington NHS Foundation Trust	Darlington Memorial Hospital
	University Hospital North Durham
Croydon Health Services NHS Trust	Croydon University Hospital
Cwm Taf University Health Board	Prince Charles Hospital
	Royal Glamorgan Hospital
Dartford and Gravesham NHS Trust	Darent Valley Hospital
Derby Hospitals NHS Foundation Trust	Royal Derby Hospital
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	Bassetlaw Hospital
	Doncaster Royal Infirmary
Dorset County Hospital NHS Foundation Trust	Dorset County Hospital
Ealing Hospital NHS Trust	Ealing Hospital
East and North Hertfordshire NHS Trust	Lister Hospital and Queen Elizabeth II Hospital
East Cheshire NHS Trust	Macclesfield District General Hospital
East Kent Hospitals University NHS Foundation Trust	Kent and Canterbury Hospital
	Queen Elizabeth The Queen Mother Hospital
	William Harvey Hospital
East Lancashire Hospitals NHS Trust	Royal Blackburn Hospital
East Sussex Hospitals NHS Trust	Conquest Hospital
	Eastbourne District General Hospital
Epsom and St Helier University Hospitals NHS Trust	Epsom Hospital
	St Helier Hospital
Frimley Park Hospital NHS Foundation Trust	Frimley Park Hospital
Gateshead Health NHS Foundation Trust	Queen Elizabeth Hospital
George Eliot Hospital NHS Trust	George Eliot Hospital
Gloucestershire Hospitals NHS Foundation Trust	Cheltenham General Hospital
	Gloucestershire Royal Hospital
Great Western Hospitals NHS Foundation Trust	The Great Western Hospital
Guy's and St Thomas' NHS Foundation Trust	St Thomas' Hospital
Hampshire Hospitals NHS Foundation Trust	Basingstoke and North Hampshire Hospital
	Royal Hampshire County Hospital
Harrogate and District NHS Foundation Trust	Harrogate District Hospital
Heart of England NHS Foundation Trust	Birmingham Heartlands Hospital
	Good Hope Hospital
	Solihull Hospital
Heatherwood and Wexham Park Hospitals NHS Foundation Trust	Wexham Park Hospital
Hinchingbrooke Health Care NHS Trust	Hinchingbrooke Hospital

Trust	Unit
Homerton University Hospital NHS Foundation Trust	Homerton Hospital
Hull and East Yorkshire Hospitals NHS Trust	Hull Royal Infirmary and Castle Hill Hospital
Hywel Dda University Health Board	Bronglais General Hospital
	Prince Philip Hospital
	West Wales General Hospital
	Withybush General Hospital
Imperial College Healthcare NHS Trust	Charing Cross Hospital
	Hammersmith Hospital
	St Mary's Hospital
Ipswich Hospital NHS Trust	Ipswich Hospital
Isle of Wight NHS Trust	St Mary's Hospital
James Paget University Hospitals NHS Foundation Trust	James Paget University Hospital
Kettering General Hospital NHS Foundation Trust	Kettering General Hospital
King's College Hospital NHS Foundation Trust	King's College Hospital
	Princess Royal University Hospital
Kingston Hospital NHS Trust	Kingston Hospital
Lancashire Teaching Hospitals NHS Foundation Trust	Chorley and South Ribble Hospital
	Royal Preston Hospital
Lewisham and Greenwich NHS Trust	Lewisham Hospital
	Queen Elizabeth Hospital
Luton and Dunstable Hospital NHS Foundation Trust	Luton and Dunstable Hospital
Maidstone and Tunbridge Wells NHS Trust	Maidstone Hospital
	Tunbridge Wells Hospital
Medway NHS Foundation Trust	Medway Maritime Hospital
Mid Cheshire Hospitals NHS Foundation Trust	Leighton Hospital
Mid Essex Hospital Services NHS Trust	Broomfield Hospital
Mid Staffordshire NHS Foundation Trust	Stafford Hospital
Milton Keynes Hospital NHS Foundation Trust	Milton Keynes Hospital
Norfolk and Norwich University Hospitals NHS Foundation Trust	Norfolk and Norwich University Hospital
North Bristol NHS Trust	Frenchay Hospital and Southmead Hospital Bristol
North Cumbria Acute Hospitals NHS Trust	Cumberland Infirmary
	West Cumberland Hospital
North Middlesex University Hospital NHS Trust	North Middlesex University Hospital
North Tees and Hartlepool NHS Foundation Trust	University Hospital of North Tees
North West London Hospitals NHS Trust	Central Middlesex Hospital
	Northwick Park Hospital
Northampton General Hospital NHS Trust	Northampton General Hospital
Northern Devon Healthcare NHS Trust	North Devon District Hospital

Trust	Unit
Northern Lincolnshire and Goole Hospitals NHS Foundation Trust	Diana, Princess of Wales Hospital
	Scunthorpe General Hospital
Northumbria Healthcare NHS Foundation Trust	Hexham General Hospital
	North Tyneside General Hospital
	Wansbeck General Hospital
Nottingham University Hospitals NHS Trust	Nottingham City Hospital
	Queens Medical Centre
Oxford University Hospitals NHS Trust	John Radcliffe Hospital, Churchill Hospital and Horton General Hospitals
Peterborough and Stamford Hospitals NHS Foundation Trust	Peterborough City Hospital
Plymouth Hospitals NHS Trust	Derriford Hospital
Poole Hospital NHS Foundation Trust	Poole Hospital
Portsmouth Hospitals NHS Trust	Queen Alexandra Hospital
Royal Berkshire NHS Foundation Trust	Royal Berkshire Hospital
Royal Cornwall Hospitals NHS Trust	Royal Cornwall Hospital
Royal Devon and Exeter NHS Foundation Trust	Royal Devon and Exeter Hospital
Royal Free London NHS Foundation Trust	Royal Free Hospital
Royal Liverpool and Broadgreen University Hospitals NHS Trust	Royal Liverpool University Hospital
Royal Surrey County Hospital NHS Foundation Trust	Royal Surrey County Hospital
Royal United Hospital Bath NHS Trust	Royal United Hospital
Salford Royal NHS Foundation Trust	Salford Royal Hospital
Salisbury NHS Foundation Trust	Salisbury District Hospital
Sandwell and West Birmingham Hospitals NHS Trust	City Hospital
	Sandwell General Hospital
Sheffield Teaching Hospitals NHS Foundation Trust	Northern General Hospital
Sherwood Forest Hospitals NHS Foundation Trust	Kings Mill Hospital
South Devon Healthcare NHS Foundation Trust	Torbay Hospital
South Tees Hospitals NHS Foundation Trust	Friarage Hospital
	The James Cook University Hospital
South Tyneside NHS Foundation Trust	South Tyneside District Hospital
South Warwickshire NHS Foundation Trust	Warwick Hospital
Southend University Hospital NHS Foundation Trust	Southend University Hospital
Southport and Ormskirk Hospital NHS Trust	Southport and Formby District General Hospital
St George's Healthcare NHS Trust	St George's Hospital
St Helens and Knowsley Teaching Hospitals NHS Trust	Whiston Hospital
Stockport NHS Foundation Trust	Stepping Hill Hospital
Surrey and Sussex Healthcare NHS Trust	East Surrey Hospital
Tameside Hospital NHS Foundation Trust	Tameside General Hospital
Taunton and Somerset NHS Foundation Trust	Musgrove Park Hospital

Trust	Unit
The Dudley Group of Hospitals NHS Foundation Trust	Russells Hall Hospital
The Hillingdon Hospitals NHS Foundation Trust	Hillingdon Hospital
The Leeds Teaching Hospitals NHS Trust	St James's University Hospital
The Mid Yorkshire Hospitals NHS Trust	Dewsbury and District Hospital
	Pinderfields Hospital
The Newcastle upon Tyne Hospitals NHS Foundation Trust	Royal Victoria Infirmary and Freeman Hospitals
The Pennine Acute Hospitals NHS Trust	North Manchester General Hospital
	Fairfield General Hospital
	The Royal Oldham Hospital
The Princess Alexandra Hospital NHS Trust	Princess Alexandra Hospital
The Queen Elizabeth Hospital King's Lynn NHS Foundation Trust	The Queen Elizabeth Hospital
The Rotherham NHS Foundation Trust	Rotherham Hospital
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	Royal Bournemouth Hospital
The Royal Wolverhampton Hospitals NHS Trust	New Cross Hospital
The Shrewsbury and Telford Hospital NHS Trust	Royal Shrewsbury Hospital
	Princess Royal Hospital
The Whittington Hospital NHS Trust	The Whittington Hospital
United Lincolnshire Hospitals NHS Trust	Grantham and District Hospital
	Lincoln County Hospital
	Pilgrim Hospital
University College London Hospitals NHS Foundation Trust	University College Hospital
University Hospitals Birmingham NHS Foundation Trust	Queen Elizabeth Hospital Birmingham
University Hospital of North Staffs NHS Trust	City General Hospital
University Hospital of South Manchester NHS Foundation Trust	Wythenshawe Hospital
University Hospital Southampton NHS Foundation Trust	Southampton General Hospital
University Hospitals Bristol NHS Foundation Trust	Bristol Royal Infirmary
University Hospitals Coventry and Warwickshire NHS Trust	University Hospital
University Hospitals of Leicester NHS Trust	Glenfield Hospital
	Leicester Royal Infirmary
University Hospitals of Morecambe Bay NHS Foundation Trust	Furness General Hospital
	Royal Lancaster Infirmary
Walsall Healthcare NHS Trust	Manor Hospital
Warrington and Halton Hospitals NHS Foundation Trust	Warrington Hospital
West Hertfordshire Hospitals NHS Trust	Watford General Hospital
West Middlesex University Hospital NHS Trust	West Middlesex University Hospital
West Suffolk NHS Foundation Trust	West Suffolk Hospital

Trust	Unit
Western Sussex Hospitals NHS Trust	St Richards Hospital
	Worthing Hospital
Weston Area Health NHS Trust	Weston General Hospital
Wirral University Teaching Hospital NHS Foundation Trust	Arrowe Park Hospital
Worcestershire Acute Hospitals NHS Trust	Alexandra Hospital
	Worcestershire Royal Hospital
Wrightington, Wigan and Leigh NHS Foundation Trust	Royal Albert Edward Infirmary
Wye Valley NHS Trust	Hereford County Hospital
Yeovil District Hospital NHS Foundation Trust	Yeovil District Hospital
York Teaching Hospital NHS Foundation Trust	Scarborough Hospital
	The York Hospital

Appendix D: BTS online audit tool

Access to the BTS online audit tool was by individual username and password, after users had registered for access to the system and been approved by nominated BTS head office staff. The COPD audit web tool was only made available to users who had been specifically granted access to this audit.

Existing users of the BTS audit system who had registered for the COPD audit were granted access to the COPD audit tool upon receipt of approval from their Caldicott Guardian. Additional auditors were required to register as users for the BTS audit system, and were approved for access to the COPD audit tool on request (subject to receipt of Caldicott Guardian approval).

Audit participants (users) would normally only be able to access data for their unit. However, some users who participated in the audit for more than one unit within their trust were allowed to access more than one unit within their trust if necessary.

The landing page for the COPD audit set out the key instructions for the audit, and contained contact details for the BTS project team and the RCP website. Communication about the audit was primarily by email to those who had registered for the audit or subsequently registered for access to the COPD audit tool.

One user from each unit was asked to complete the organisational audit, and would create a new record using the 'Add a new record' function. Other registered users for that unit could access and edit the record, but only the auditor who created the record could commit or delete it.

Data entry comprised 'clicking' in the box next to the question being answered and typing the answer or selecting one or more appropriate answers from the lists provided. 'Help note' icons beside questions contained clarification and suggestions for sources of data, where appropriate.

The organisational audit questions were divided into five sections, indicated by tabs across the top of the screen: admissions, staffing levels and general organisation of care; organisation of acute respiratory care; managing respiratory failure – NIV; managing respiratory failure – emergency oxygen therapy; and integrating care across primary and secondary sectors.

Text in the section tabs turned from red, when data entry was incomplete, to black when the section had been completed. Users could move between sections using the 'Previous section' or 'Next section' icons, but if they tried to move on from a section that was incomplete, they would receive a warning message.

The record could be saved and returned to at any point by clicking the 'Save' or 'Save & close' icons. When the record was complete, this was confirmed by clicking 'Commit submissions'. Only committed data went forward for analysis.

After the record was committed, it could not be edited. However, BTS head office staff could uncommit records if corrections were needed. (BTS head office staff could commit or uncommit records on request, but they would not make any corrections or delete data.)

Appendix E: National COPD Audit Programme governance

The National COPD Audit Programme is led by the Clinical Effectiveness and Evaluation Unit 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) and the Royal College of General Practitioners (RCGP).

The programme is guided by a programme board, consisting of programme delivery partners, and a wider programme steering group (membership listed below). 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.

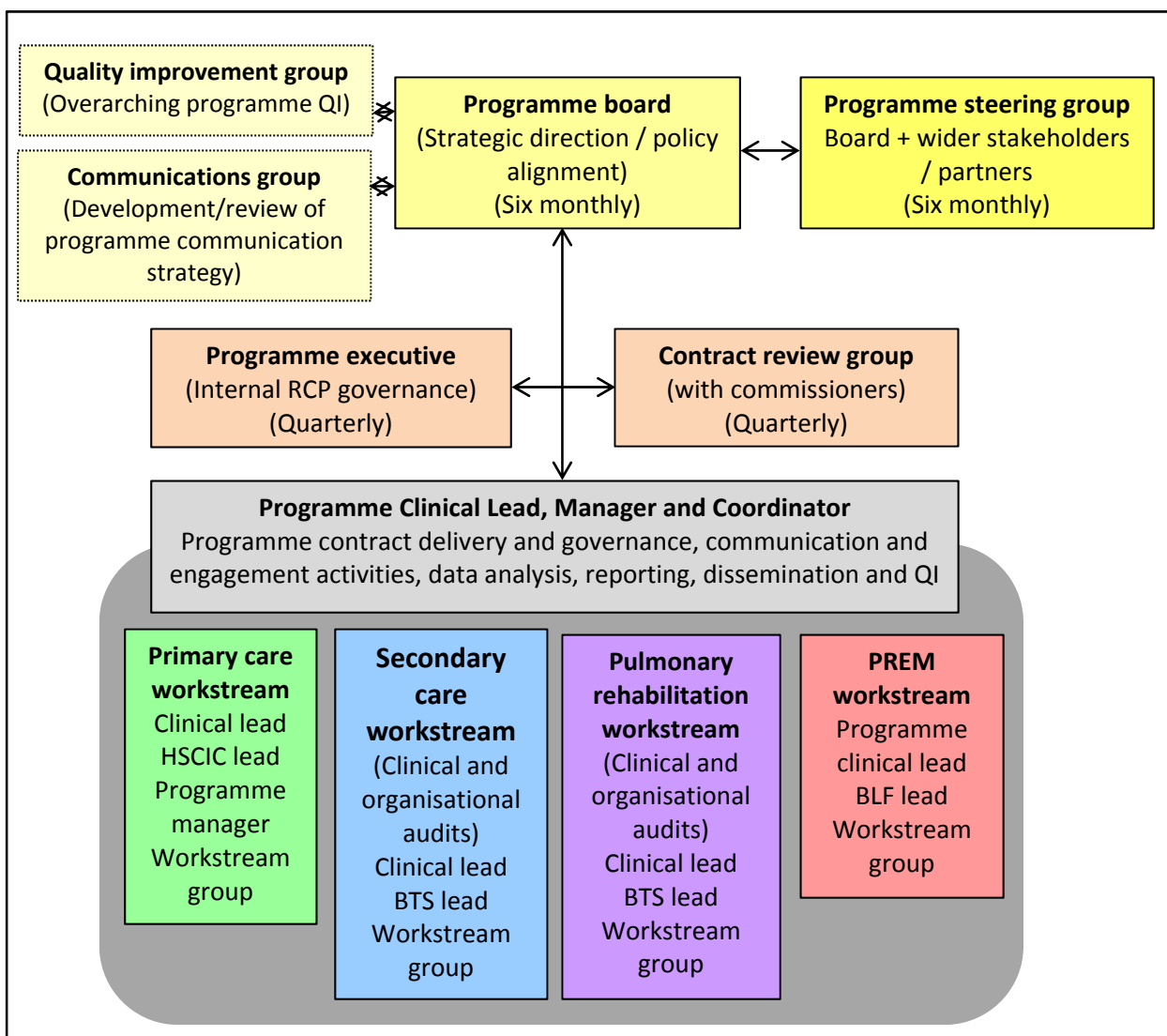


Fig 2: National COPD Audit Programme governance structure

- The programme board meets at least twice yearly, to provide strategic direction and to ensure that the National COPD Audit Programme achieves its objectives. It comprises the programme and workstream clinical leads, and representatives from the programme delivery team (RCP, BTS, BLF and HSCIC).
- The programme steering group meets twice yearly, to ensure the National COPD Audit Programme's relevance to those receiving and delivering COPD services in England and Wales. It

comprises the programme strategic partners and wider representation from organisations such as the Royal College of Nursing (RCN), the Association of Respiratory Nurse Specialists (ARNS), NHS Wales and Picker Institute Europe.

- The workstream advisory groups are tasked with the development and day-to-day running of their specific element of the programme: thus the secondary care audit workstream group has developed, tested and implemented the resource and organisation survey (organisational audit), along with the clinical audit, drawing its membership from the steering group supported by expert representatives from respiratory medicine, nursing and NHS England Patient Experience. The workstream group meets quarterly or as necessary to monitor progress, and to support and direct the project. The BTS project team and secondary care clinical lead have met weekly throughout the project.

The National COPD Audit Programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit Programme (NCA).

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

National COPD Audit Programme board members

Programme clinical leadership

- Professor C Michael Roberts, National COPD Audit Programme – Programme Clinical Lead; 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
- Dr Rupert Jones, National COPD Audit Programme Clinical Lead – Primary Care Workstream; Clinical Research Fellow, Centre for Clinical Trials and Population Research, Plymouth University Peninsula School of Medicine and Dentistry; and General Practitioner
- Professor Michael Steiner, National COPD Audit Programme Clinical Lead – Pulmonary Rehabilitation Workstream; Honorary Clinical Professor at Loughborough University; and Consultant Respiratory Physician, Glenfield Hospital, Leicester
- Dr Robert A Stone, National COPD Audit Programme Clinical Lead – Secondary Care Workstream; and Consultant Respiratory Physician, Taunton and Somerset NHS Foundation Trust, Musgrove Park Hospital, Taunton

British Thoracic Society

- Miss Sally Welham, Deputy Chief Executive and BTS Project Lead for the National COPD Secondary Care Audit
- Ms Laura Searle, National COPD Audit Project Coordinator

British Lung Foundation

- Dr Penny Woods, Chief Executive
- Mr Mike McKeivitt, Head of Patient Services

Health and Social Care Information Centre

- Mr Dominic Povey, Operations Manager, Clinical Audit Support Unit (CASU)

Royal College of Physicians

- Rhona Buckingham, Operations Director, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Mr Ian Bullock, Clinical Standards Director, Clinical Standards Department; and Chief Operating Officer, National Clinical Guidelines Centre
- Ms Juliana Holzhauser-Barrie, National COPD Audit Programme Coordinator, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Mrs Emma Skipper, National COPD Audit Programme Manager, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Dr Kevin Stewart, Clinical Director, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department

National COPD Audit Programme steering group members

Programme clinical leadership

- Professor C Michael Roberts, National COPD Audit Programme – Programme Clinical Lead; 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
- Dr Rupert Jones, National COPD Audit Programme Clinical Lead – Primary Care Workstream; Clinical Research Fellow, Centre for Clinical Trials and Population Research, Plymouth University Peninsula School of Medicine and Dentistry; and General Practitioner
- Professor Michael Steiner, National COPD Audit Programme Clinical Lead – Pulmonary Rehabilitation Workstream; Honorary Clinical Professor at Loughborough University; and Consultant Respiratory Physician, Glenfield Hospital, Leicester
- Dr Robert A Stone National COPD Audit Programme Clinical Lead – Secondary Care Workstream; and Consultant Respiratory Physician, Taunton and Somerset NHS Foundation Trust, Musgrove Park Hospital, Taunton

Association of Chartered Physiotherapists in Respiratory Care

- Ms Catherine Thompson, Association of Chartered Physiotherapists in Respiratory Care (ACPRC) Chair; and Head of Patient Experience for Acute Services, NHS England

British Thoracic Society

- Ms Laura Searle, National COPD Audit Project Coordinator
- Dr Nick Hopkinson, Clinical Senior Lecturer, the National Heart and Lung Institute of Imperial College, London; Honorary Consultant Chest Physician, Royal Brompton Hospital, London; and Reader in Respiratory Medicine, Royal Brompton Hospital, London
- Miss Sally Welham, Deputy Chief Executive; and BTS Project Lead for the National COPD Secondary Care Audit

British Lung Foundation

- Dr Penny Woods, Chief Executive
- Mr Mike McKeivitt, Head of Patient Services

Health and Social Care Information Centre

- Ms Emma Adams, Clinical Audit Project Lead, Clinical Audit Support Unit (CASU) (from May 2014)
- Mr Ala Uddin, Clinical Audit Project Lead, Clinical Audit Support Unit (CASU) (to May 2014)

Healthcare Quality Improvement Partnership

- Ms Yvonne Silove, National Clinical Audit Development Manager

NHS England

- Mr Alex Porter, Clinical Informatics Network Support Manager, Medical Directorate, NHS England

NHS Wales

- Dr Patrick Flood-Page, Welsh Health Boards Representative; Consultant Respiratory Physician, Royal Gwent Hospital; Chair of the British Lung Foundation in Wales; Lecturer at Cardiff University; Training Programme Director for Respiratory Medicine at the Wales Deanery; and part of the Royal College Specialist Advisory Committee for Respiratory Medicine

Patient Representative

- Ms Suzie Shepherd, Lay Chair of the RCP Patient Involvement Unit; Chair of Leeds Occupational Health Advisory Service; Patient Advisor to the Leeds Rheumatology Scientific Advisory Board; Vice Chair of the Clinical Accreditation Alliance; and Patient Lead on the RCP Future Hospitals Programme

Picker Institute Europe

- Mr Chris Graham, Director of Research and Policy

Primary Care Respiratory Society UK

- Dr Rupert Jones, Primary Care Respiratory Society UK Executive and Research Lead; National COPD Audit Programme Clinical Lead – Primary Care Workstream; Clinical Research Fellow, Centre for Clinical Trials and Population Research, Plymouth University Peninsula School of Medicine and Dentistry; and General Practitioner

Royal College of Nursing

- Ms Caia Francis, Senior Lecturer, Nursing and Midwifery Department, Faculty of Health and Applied Sciences, University of the West of England

Royal College of Physicians

- Rhona Buckingham, Operations Director, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Ms Jane Ingham, Clinical Standards Director, Clinical Standards Department (to November 2014)
- Mr Ian Bullock, Clinical Standards Director, Clinical Standards Department; and Chief Operating Officer, National Clinical Guidelines Centre (from April 2014)
- Ms Juliana Holzhauer-Barrie, National COPD Audit Programme Coordinator, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Professor Derek Lowe, Medical Statistician, Clinical Standards Department
- Mrs Emma Skipper, National COPD Audit Programme Manager, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department
- Dr Kevin Stewart, Clinical Director, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department

Royal College of General Practitioners

- Dr Kevin Gruffydd-Jones, Respiratory Clinical Lead, Royal College of General Practitioners; Honorary Lecturer at University of Bath; and General Practitioner
- Ms Megan Lanigan, Programme Manager, Clinical Innovation and Research Centre (CIRC)
- Dr Imran Rafi, Chair of the Clinical Innovation and Research Centre (CIRC); and Senior Lecturer in Primary Care Education, St George's University of London; and General Practitioner

National COPD Audit Programme secondary care workstream group

- Dr Colin Gelder, Consultant Respiratory Physician, University Hospital, Coventry
- Ms Juliana Holzhauer-Barrie, National COPD Audit Programme Coordinator, Clinical Effectiveness and Evaluation Unit, Clinical Standards Department, Royal College of Physicians, London
- Dr John Hurst, Consultant and Senior Clinical Lecturer, UCL Medical School
- Professor Derek Lowe MSc, C.Stat Medical Statistician, Clinical Standards Department, Royal College of Physicians, London
- Dr Gill Lowrey, Consultant Respiratory Physician, Royal Derby Hospital
- Mr Mike McKeivitt, Head of Patient Services, British Lung Foundation
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- Dr Louise Restrick, Consultant Respiratory Physician, Whittington Hospital
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Appendix F: [NICE COPD Quality Standards \(2011\) \(5\)](#)

1. People with COPD have one or more indicative symptom recorded and have the diagnosis confirmed by post-bronchodilator spirometry carried out on calibrated equipment by healthcare professionals competent in its performance and interpretation.
2. People with COPD have a current individualized comprehensive management plan, which includes high-quality information and educational material about the condition and its management, relevant to stage of disease.
3. People with COPD are offered inhaled and oral therapies, in accordance with NICE guidance, as part of an individualized comprehensive management plan.
4. People with COPD have a comprehensive clinical psychosocial assessment, at least once a year or more frequently if indicated, which includes degree of breathlessness, frequency of exacerbations, validated measures of health status and prognosis, presence of hypoxaemia and co-morbidities.
5. People with COPD who smoke are regularly encouraged to stop and are offered the full range of evidence-based smoking cessation support.
6. People with COPD meeting appropriate criteria are offered an effective, timely and accessible multidisciplinary pulmonary rehabilitation programme.
7. People who have had an exacerbation of COPD are provided with individualized written advice on early recognition of future exacerbations, management strategies (including appropriate provision of antibiotics and corticosteroids for self-treatment at home) and a named contact.
8. People with COPD potentially requiring long-term oxygen therapy are assessed in accordance with NICE guidance by a specialist oxygen service.
9. People with COPD receiving long-term oxygen therapy are reviewed in accordance with NICE guidance, at least annually, by a specialist oxygen service.
10. People admitted to hospital with an exacerbation of COPD are cared for by a respiratory team, and have access to a specialist early-supported discharge scheme with appropriate community support.
11. People admitted to hospital with an exacerbation and with persistent acidotic ventilatory failure are promptly assessed for, and receive, non-invasive ventilation delivered by appropriately trained staff in a dedicated setting.
12. People admitted to hospital with an exacerbation are reviewed within 2 weeks of discharge.
13. People with advanced COPD, and their carers, are identified and offered palliative care that addresses physical, social and emotional needs.

Appendix G: Glossary of terms and abbreviations

<i>An outcomes strategy for chronic obstructive pulmonary disease (COPD) and asthma in England</i>	Sets out the outcomes that need to be achieved in COPD and asthma to deliver the government’s commitment to improve health outcomes and reduce inequalities: Department of Health. <i>An outcomes strategy for chronic obstructive pulmonary disease (COPD) and asthma in England</i> . London: DH, 2011. www.gov.uk/government/uploads/system/uploads/attachment_data/file/216139/dh_128428.pdf
Audit	A process that measures care against set criteria, to identify where changes can be made to improve the quality of care
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
Discharge bundle	A discharge protocol setting out a limited number of evidence-based actions, which, if implemented, improve outcomes
Domains	The NHS Outcomes Framework sets out five domains focusing on improving health and reducing health inequality that the NHS should be aiming to improve: Domain 1 – Preventing people from dying prematurely Domain 2 – Enhancing quality of life for people with long-term conditions Domain 3 – Helping people to recover from episodes of ill health or following injury Domain 4 – Ensuring that people have a positive experience of care Domain 5 – Treating and caring for people in a safe environment and protecting them from avoidable harm
Early/supported discharge scheme (EDS)	A service providing enhanced support to COPD patients in the community so that their discharge from hospital can be expedited and their management continued in primary care
HDU	High-dependency unit
Health communities	The loose collective term used to describe a locality in which healthcare is provided by groups of professionals to patients and their carers
ICT	Information and communications technology
ICU	Intensive care unit

Integrated care	The coordination of care across different health settings, notably between the primary and secondary care sectors, particularly for patients with complex or long-term conditions
Interquartile range (IQR)	The IQR is the range between 25th and 75th centile which is equivalent to the middle half of all values.
ITU	Intensive treatment/therapy unit
Level 2 care	Care for patients requiring more detailed observation or intervention, including support for a single failing organ system or postoperative care, and those 'stepping down' from higher levels of care
Lung volume reduction (LVR)	Removal of the parts of the lung that are particularly damaged by emphysema with the aim of allowing the remaining, relatively good lung to expand and work better
MAU	Medical assessment unit/Medical admissions unit
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 data set: half of the values are below this point, and half are above this point.
Multidisciplinary team (MDT)	Several types of health professionals working together, eg physiotherapists, occupational therapists, dieticians, nurses and doctors
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
Palliative care	Treating symptoms at the end of life
PCU	Partnership commissioning unit
Primary care	Local healthcare delivered by GPs, NHS walk-in centres and others, which is provided and managed by CCGs
Pulmonary rehabilitation	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
Respiratory ward	The area within a unit where patients with respiratory conditions are nursed and cared for by the respiratory team
Secondary care	Planned and unplanned care that is provided in hospitals
Senior decision maker	Clinician (doctor) of grade SpR or above
Sessional consultant	A consultant who is employed specifically to work in a particular place for a fixed period of time (a session usually equating to 4 hours)

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 exhaled, and which is used to diagnose COPD
SpR	Specialist registrar – a middle-grade doctor training to be a consultant
Unit	For the purposes of this audit, a hospital that admitted acute unselected emergency COPD admissions, although some hospitals submitted data jointly as a single unit
Whole-time equivalent (WTE)	A measurement of staff resource where 1 person working full time is 1 WTE, a person working 2 days per week is 0.4 WTE, etc

Appendix H: References

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We also have a quarterly newsletter, so please send us your email address and contact details if you would like to join the mailing list.

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