



Royal College
of Physicians

NACAP

National Asthma and Chronic Obstructive Pulmonary Disease Audit Programme (NACAP)

COPD clinical audit 2018/19

(people with COPD exacerbations discharged from acute
hospitals in England, Scotland and Wales between October 2018
and September 2019)

Clinical audit report

Published July 2020



In association with:

Commissioned by:



Imperial College
London



Royal College of
General Practitioners



HQIP
Healthcare Quality
Improvement Partnership

The Royal College of Physicians

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National Asthma and Chronic Obstructive Pulmonary Disease (COPD) Audit Programme

NACAP is a programme of work that aims to improve the quality of care, services and clinical outcomes for patients with asthma and COPD in England, Scotland and Wales. Spanning the entire patient care pathway, NACAP includes strong collaboration with asthma and COPD patients, as well as healthcare professionals, and aspires to set out a vision for a service which puts patient needs first. To find out more about the NACAP visit: www.rcplondon.ac.uk/nacap.

COPD: clinical audit 2018/19

This report was prepared by the following people, on behalf of the COPD advisory group (the full list of members can be found on the NACAP resources page): www.rcplondon.ac.uk/nacap-resources.

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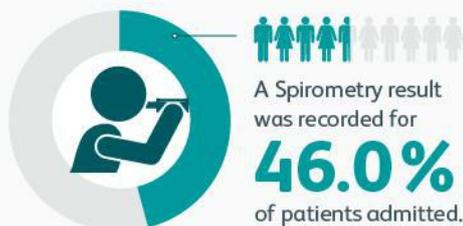
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Report at a glance

Spirometry



QI priority

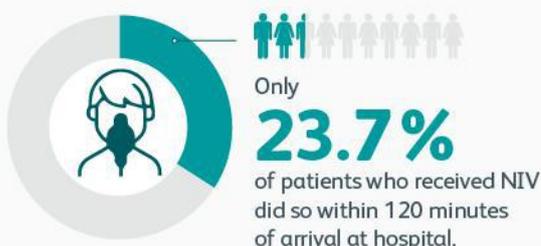
Ensure spirometry results are available for all patients admitted to hospital with an acute exacerbation of COPD.

Changes over time

(spirometry result recorded)



Non-invasive ventilation (NIV)



QI priority

Ensure all patients requiring NIV receive it within 120 minutes of arrival at hospital.

Changes over time

(NIV received within 120 minutes of arrival)



Respiratory review

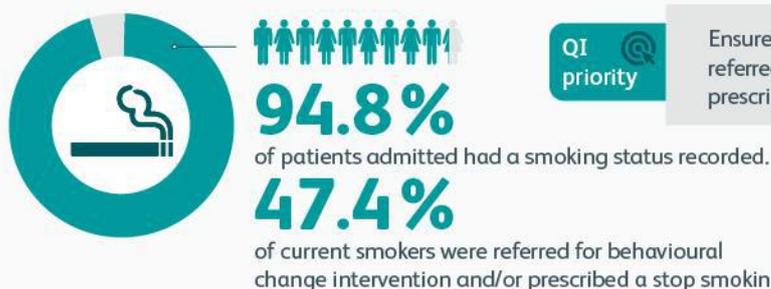


Changes over time

(patients reviewed by member of the respiratory team within 24 hours)



Smoking cessation



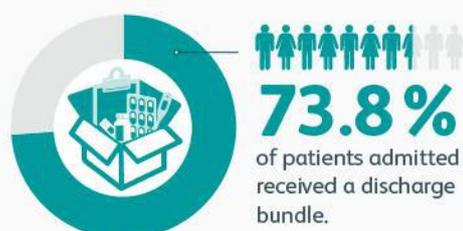
QI priority

Ensure that all current smokers are identified and, if they accept, referred for behavioural change intervention and/or prescribed a stop smoking drug.

Changes over time (smoking status recorded)



Discharge bundles



Changes over time (patients receiving a discharge bundle)



How to use this report

1 Scope and data collection

The Chronic Obstructive Pulmonary Disease (COPD) clinical audit, a component of the National Asthma and COPD Audit Programme (NACAP), is a continuous audit launched in February 2017 in England and Wales, and November 2018 in Scotland. It captures the process and clinical outcomes of treatment in patients admitted to hospital in England, Scotland and Wales with COPD exacerbations.

This report, which is the third report following the launch of continuous data collection, presents data describing the cohort of patients discharged between 1 October 2018 and 30 September 2019. Contributing to the overarching national quality improvement (QI) objectives of the NACAP, it serves to empower stakeholders to use audit data to facilitate improvements in the quality of care.

The report highlights three key areas for QI in 2018/19. Providers and commissioners should consider how these can be delivered locally for the benefit of patients and the healthcare system. A selection of case studies, provided by participating hospitals teams, are included in the report to showcase good practice. In addition, tips to achieving the QI priorities are included in the relevant sections of the report. For more information about the delivery of QI within the NACAP please view the programme's QI strategy available at:

www.rcplondon.ac.uk/projects/outputs/national-asthma-and-copd-audit-programmenacap-quality-improvement-resources.

2 Indicators included

Key process measures included in this report are: review by a member of the respiratory team; oxygen prescriptions; availability of spirometry results; smoking cessation; and provision of a discharge bundle and elements of good practice care. The outcome measures included in this report are length of stay and inpatient mortality.

An addendum to this report will be published in 2020, detailing 30- and 90-day mortality and hospital readmission rates. The two reports together are designed to provide a picture of the care provided to the cohort of patients admitted to hospital with COPD exacerbations who were included in the audit, as well as their outcomes post-discharge. With each round of reporting, the NACAP aims to provide an increasingly comprehensive picture of COPD care provided across the country as case ascertainment builds over the length of the continuous audit.

A separate data analysis and methodology report is available at:

www.rcplondon.ac.uk/adultasthma-2018-19. This provides the following information:

- > the full data analysis, presented with England, Scotland and Wales results, as well as combined results for all three countries denoted as 'All' in tables and figures, with explanatory notes throughout
- > nationally benchmarked results for participating hospitals, using variables based on national guidelines and standards
- > appendices, including the methodology for the audit.

It is not necessary to review the full analysis to appreciate the key messages available in this short report.

Provider-level audit data will be made publicly available on www.data.gov.uk, in line with the government's transparency agenda. In addition, authorised hospital web tool users can download their raw audit data via the audit web tool at any point. Run charts for key dataset metrics are also accessible for authorised hospital web tool users to access; these display audit data in real-time at provider- and national-level to support local QI. Copies of our datasets, our good practice repository and all other resources can be found via our website: www.rcplondon.ac.uk/nacap-copd-resources.

3 Report coverage

National breakdowns are given for England, Scotland and Wales, as well as 'All' figures.

4 Audience and links to relevant guidelines and standards

The report is intended to be read by healthcare professionals; NHS managers, chief executives and board members; as well as service commissioners, policymakers and voluntary organisations. A separate report has been produced for patients and the public and is available at:

www.rcplondon.ac.uk/copd-2017-18. However, where a certain area of care has been highlighted as a priority for patients this is shown with the following patient priority icon 

References to the appropriate National Institute for Health and Care Excellence (NICE) quality statements,^{1,2} (Appendix B), clinical guidelines³ (Appendix C) and British Thoracic Society (BTS) non-invasive ventilation (NIV) quality standards⁴ (Appendix D) are inserted throughout the key findings.



2 Foreword by John Hurst, COPD audit clinical lead

Welcome to the latest NACAP report which describes the care and in-hospital outcomes for 82,268 people admitted for acute exacerbation of COPD (AECOPD) between 1 October 2018 and 31 September 2019, representing **58% (IQR 40 – 70%)** of coded admissions.

There are significant changes included in this latest report. It reflects alterations to the data collection fields that were made during 2018 and, as a result, for the first time, we have been able to include data on the National Early Warning Score (NEWS2), and on the prevalence and intervention for cardiac and mental health comorbidities that are known to track with readmission risk. This report also includes data from Scotland.

Some significant improvements have been made and there is therefore cause to celebrate. Notably, better availability of spirometry which is essential for confirming that a person with a clinical diagnosis of exacerbation has COPD. Process measures such as early specialist respiratory review (linked with markers of better care) are slowly improving too, as is the use of discharge bundles. However, when examining individual components of effective discharge, performance is more variable, with for example, only 9% of patients having been discussed with a community-based team at a multidisciplinary team (MDT) meeting. Hard clinical outcomes such as length of stay (4 days), inpatient mortality (3.6%) and readmissions (the latter considered in the companion outcomes report) have not changed, with significant variation in mortality apparent across England, Scotland and Wales.

Achievements aside, there is much still to do. We must be better at getting non-invasive ventilation (NIV) to those who need it earlier in their admission. We have to be better at supporting current smokers in effective stop smoking attempts. Finally, we have to have consistent, and effective, implementation of discharge bundles.

The value of NACAP is providing you with your data to enable QI. Separate reporting of data from England, Scotland and Wales confirm significant variation in care also seen within individual nations. As a COPD clinician, ask yourself how your care compares to national, country and local performance, and what you can do to change that for the better. Use NACAP data to support that. As part of a comprehensive QI strategy, NACAP is a tool for reducing unwarranted variation and improving the quality of care. As a commissioner and manager, ask yourself how you can support frontline clinical teams to deliver better care. As a person living with COPD, we stand with you. That we are seeing improvements in care, and wide engagement with NACAP is testament to the value of this process, and the commitment of frontline clinical teams to delivering the best possible care for COPD exacerbations this time, every time, and wherever and whenever that admission occurs.

Finally, I would like to pay tribute to the NACAP staff at the Royal College of Physicians, to Dr Jenni Quint and the data team at Imperial College, and to the NACAP Board and COPD Advisory Group for delivering and supporting the work that is summarised here. Together, we can – and must – continue to improve care and outcomes for people admitted to hospital with COPD exacerbations in the UK.

3 Recommendations

National (NACAP and national data collection organisations)

1. The National Asthma and COPD Audit Programme (NACAP) should work with NHS Digital in England, the Scottish electronic Data Research and Innovation Service (eDris) and the NHS Wales Informatics Service (NIWS) to maximise opportunities to support hospitals to identify COPD admissions and prospectively collect audit data. This can be done by implementing information systems to identify patients early in admission, alerting teams and facilitating audit collection.

For providers of hospital-based COPD care

We defined three key QI priorities for 2018 and these are retained to allow a continued focus on these important areas. They were chosen with a strong evidence base for their effectiveness in improving outcomes. These priorities still stand as there is further improvement required:

1. **National QI priority 1:** Ensure that all patients requiring NIV on presentation receive it within 120 minutes of arrival for those patients who present acutely. (*BTS NIV QS4*)⁴
2. **National QI priority 2:** Ensure that a spirometry result is available for all patients admitted to hospital with an acute exacerbation of COPD. (*NICE [NG115] 1.1.4, NICE [QS10] statement 1*)^{3,1}
3. **National QI priority 3:** Ensure that all current smokers are identified, offered, and if they accept, referred to behavioural change intervention and/or prescribed a stop smoking drug. (*NICE [NG115] 1.2.3, 1.2.4*)³

For commissioners / health boards / sustainability and transformation partnerships, and integrated care systems

1. Ensure all acute trusts/units are taking part in the audit and using audit data to support QI. There should be sight of this at board level.
2. Support working across traditional primary, community and secondary care boundaries to facilitate information sharing of spirometry results therefore enabling seamless care.
3. Invest in high-value interventions with robust evidence of benefit in COPD, notably smoking cessation services and pulmonary rehabilitation.^{7 *}

For primary care providers

1. Support data sharing across primary, community and secondary care teams, notably in the provision of diagnostic spirometry.
2. Commit as a practice to ensure that all staff who have contact with patients undertake online Very Brief Advice (VBA) training in relation to smoking cessation (www.ncsct.co.uk/publication_very-brief-advice.php).

For people living with COPD and their families and carers

1. For these recommendations please view the patient-specific report that can be downloaded here: www.rcplondon.ac.uk/copd-2017-18

* The NACAP ran a snapshot pulmonary rehabilitation clinical and organisational audit in England and Wales in 2017. The report published in April 2018 supports the considerable health benefits in those patients completing pulmonary rehabilitation for their COPD. Access the report here: www.rcplondon.ac.uk/an-exercise-in-improvement.

4 Key findings and quality improvement priorities



Section 1: General information

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Median length of stay



4 days



4 days



4 days



4 days

Key findings

Admission and demographics

- A higher proportion of **COPD admissions** were **female (53.8%)** (53.3% in 2017/18).
- The mean **age at admission** was **71 years**.
- The highest proportion of **COPD admissions** were from the **most deprived areas in England (35.6%), Scotland (37.7%) and Wales (36.3%)**. For England and Wales this is similar to 2017/18 but these are the first data from Scotland.
- **There were more admissions** for COPD during **weekdays than at weekends**, with the busiest admission period across the week falling on a **Monday between 2pm and 8pm**.

Length of stay

- The **median length of stay** for admissions remained at **4 days**.

Inpatient mortality

- **Inpatient mortality remained stable** at 3.6% overall compared with 3.8% reported in 2017/18, however crude **inpatient mortality appears higher in Scotland (5.7%) and Wales (4.9%)** compared with **England (3.6%)**.

Case ascertainment

- The median case ascertainment for the period of 1 October 2018 to 30 September 2019 was **58% (IQR 40 – 70%)**. In **England**, the median case ascertainment for this period was **58% (IQR 42 – 70%)**. In **Wales**, the median case ascertainment for this period was **43% (IQR 19 – 74%)**.
- Case ascertainment data for Scotland was only available from 1 April 2019, therefore a Scottish breakdown cannot be given.



Section 2: Respiratory review



To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Was the patient reviewed by a member of the respiratory team within 24 hours?



67.5%



46.6%



38.8%



66.1%

Key standards:

NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults [QS10] (2011),

statements 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.²

Key findings

- **86.5%** of admissions were **reviewed** by a member of the **respiratory team** compared with 84.7% in 2017/18. 66.1% of admissions were **reviewed within 24 hours** (64.0% in 2017/18).[†]
- The median time from **admission to respiratory team review** was **14.7 hours** (15.0 hours in 2017/18).
- Respiratory team review within 24 hours was associated with or had an impact on:
 - **Better smoking cessation support;** smokers who **received a specialist review** within 24 hours were **more likely** to be referred to behavioural change intervention and/or prescribed stop smoking drug (**53.3%**) compared with those who did not receive a review (**38.5%**).
 - **Discharge bundles;** patients who **received a specialist review** within 24 hours were **much more likely** to receive a discharge bundle (**86.5%**) compared with those who did not receive a review (**50.0%**).
 - **Oxygen prescription;** patients who received a **specialist review within 24 hours** and required oxygen were **more likely (64.0%)** to receive it compared with those who received a review after 24 hours (**54.2%**).

[†] The national NICE quality standard requires patients to be reviewed by a member of the respiratory team upon admission for COPD, whereas the [Best Practice Tariff](#) (BPT) for COPD requires the respiratory review to take place within 24 hours. Performance for both measures have therefore been included here.

Case study: Eastbourne District General Hospital (East Sussex Healthcare NHS Trust)



- A respiratory specialist nurse attends every ward daily to ensure appropriate patients are identified.
- Respiratory consultants also attend or covered the front end of hospital which is the hospital's acute medical admission unit.
- A local electronic system is also used to identify appropriate patients in different wards. The specialist nurse normally performs ward rounds and gets patient lists from nursing handover to make sure no patient is missed.
- Since September 2018 respiratory review was continuously maintained at 60% within 24 hours and met the BPT status.
- COPD multidisciplinary team (MDT) meetings also take place with respiratory consultant to discuss any complex patients who might require further input and changes to their care in the acute/community settings.

95% of patients at Eastbourne District General Hospital were reviewed by a member of the respiratory team within 24 hours of admission.



Section 3: Oxygen

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Was oxygen prescribed?



60.8%



65.6%



57.7%



60.7%

Key standards:

[NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults \[QS10\] \(2016\),](#)

[statement 6](#): People receiving emergency oxygen for an acute exacerbation of COPD have oxygen saturation levels maintained between 88% and 92%.¹

[NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults \[QS10\] \(2016\),](#)

[statement 3](#): People with stable COPD and a persistent resting stable oxygen saturation level of 92% or less have their arterial blood gases measured to assess whether they need long-term oxygen therapy.¹

[NICE Guideline \[NG115\], Chronic obstructive pulmonary disease in over 16s: diagnosis and](#)

[management, 1.3.28](#): If necessary, prescribe oxygen to keep the oxygen saturation of arterial blood (SaO₂) within the individualised target range.³

Key findings

- **60.7%** of admissions were **prescribed** oxygen. The way these data have been calculated has changed from 2017/18 so figures are not directly comparable with previous audit results.
- **2.3%** of admissions that had oxygen prescribed did **not have a target range stipulated**, similar to the 2.7% reported in 2017/18.



Section 4: Non-invasive ventilation

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

If the patient received acute treatment with NIV, was it received within 2 hours of arrival?



10.1%



10.2%



13.9%



10.2%

Key standards:

NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults [QS10] (2016), statement 7:

People with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour^c of optimal medical therapy have non-invasive ventilation.¹

NICE Guideline [NG115], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.3.31:

Use NIV as the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations despite optimal medical therapy.³

British Thoracic Society (BTS) Quality Standards for acute NIV in adults, Statement 1:

Acute non-invasive ventilation (NIV) should be offered to all patients who meet evidence-based criteria.

Hospitals must ensure there is adequate capacity to provide NIV to all eligible patients.⁴

Key findings

- **10.2%** of admissions **received acute treatment with NIV** compared with 10.3% in 2017/18. The rate in Wales was higher at 13.9%.
- Of those who received NIV, **23.7% received it within 2 hours of arrival** at hospital (21.0% in 2017/18).
- **The 15.2%** of admissions who received NIV **later than 24 hours** are likely 'late failures'.
- Patients who received acute treatment with **NIV between >2 and 24 hours after they arrived at hospital** were **more likely** to have a length of stay greater than 4 days (73.0%) relative to patients receiving NIV in less than 2 hours (70.6%).

^c NACAP uses a 2-hour timeframe for NIV to provide teams with the time to 1) recognise that non-improvement after an hour and 2) organise the NIV following that recognition.



National QI priority: Ensure that all patients requiring NIV on presentation receive it within 120 minutes of arrival for those patients who present acutely. (*BTS NIV QS4*)

Rationale:

Timely NIV is associated with reduced length of stay. Patients admitted with respiratory acidosis are the sickest with high mortality.⁵ There remains significant variability in the speed at which hospitals administer NIV which is unexplained, suggesting that it relates to process of care.

Tips to achieve this priority:

- > Ensure close working relationships with A&E and acute medicine teams.
- > Have a dedicated respiratory contact to call for patients requiring assessment for NIV.
- > Use the data from the audit to develop local QI projects to understand local challenges and test methods for mitigating against these.



Section 5: Spirometry

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Was a spirometry result available for the patient?



46.3%



41.6%



39.4%



46.0%

Key standards:

[NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults \[QS10\] \(2016\)](#),

statement 1: People aged over 35 years who present with a risk factor and one or more symptoms of chronic obstructive pulmonary disease (COPD) have post-bronchodilator spirometry.¹

[NICE Guideline \[NG115\], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.1.4:](#) Perform spirometry:

- > At diagnosis
- > To reconsider the diagnosis, for people who show an exceptionally good response to treatment
- > To monitor disease progression.³

[NICE Guideline \[NG115\], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.1.5:](#) Measure post-bronchodilator spirometry to confirm the diagnosis of COPD³

Key findings

- A **spirometry** result was **available for 46.0%** of admissions, an increase from 40.5% in 2017/18. **Availability was greater in England (46.3%)** than in Scotland (41.6%) and Wales (39.4%).
- **13.8%** of admissions with a spirometry result recorded had **no evidence of airflow obstruction despite being managed for COPD exacerbation**, higher than the 12.1% recorded in 2017/18.



National QI priority: Ensure that a spirometry result is available for all patients admitted to hospital with an acute exacerbation of COPD. (*NICE [NG115] 1.1.4, NICE [QS10] statement 1*)

Rationale:

The diagnosis of COPD can **only** be made using quality-assured post-bronchodilator spirometry. (*NICE [QS10] statement 1*) In someone admitted to hospital with symptoms suggestive of a COPD exacerbation, access to diagnostic spirometry provides assurance that COPD is the correct underlying diagnosis, or excludes COPD prompting consideration of other diagnoses.

Tips to achieve this priority:

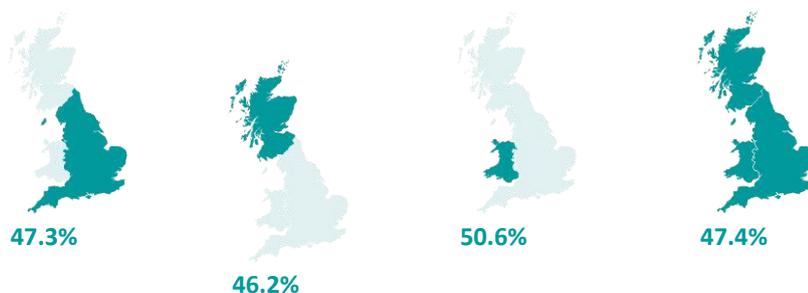
- > Ensure close working links between hospital, community and primary care teams to facilitate sharing and access to spirometry results.
- > Conduct pre-discharge spirometry thus providing the opportunity to confirm or exclude airflow obstruction in people with no available spirometry.
- > Spirometry results should be accessible from routine clinical stations and computers.
- > Keep a record of previous spirometry results such that the information on patients being readmitted is easy to locate.



Section 6: Smoking

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

If the patient was a current smoker, were they referred to behavioural change intervention and/or prescribed a stop smoking drug during the current admission?



Key standards:

NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults [QS10] (2011), statement 5: People with COPD who smoke are regularly encouraged to stop and are offered the full range of evidence-based smoking cessation support.²

NICE Guideline [NG115], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.2.2: Document an up-to-date smoking history, including pack years smoked (number of cigarettes smoked per day, divided by 20, multiplied by the number of years smoked) for everyone with COPD.³

NICE Guideline [NG115], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.2.3: At every opportunity, advise and encourage every person with COPD who is still smoking (regardless of their age) to stop, and offer them help to do so.³

NICE Guideline [NG115], Chronic obstructive pulmonary disease in over 16s: diagnosis and management, 1.2.4: Unless contraindicated, offer nicotine replacement therapy, varenicline or bupropion as appropriate to people who want to stop smoking, combined with an appropriate support programme to optimise smoking quit rates for people with COPD.³

NICE Quality Standards, Smoking: Supporting people to stop [QS43] (2013), standard 1: People are asked if they smoke by their healthcare practitioner, and those who smoke are offered advice on how to stop.⁶

Key findings

- 34.2% of admissions were **current smokers** (32.3% in 2017/18). Few patients were vaping (1.1%).
- Just 47.4% of current smokers were **referred to behavioural change intervention and/or prescribed a stop smoking drug** during the admission.



National QI priority: Ensure that all current smokers are identified, offered, and if they accept, are referred to behavioural change intervention and/or prescribed a stop smoking drug. (*NICE [NG115] 1.2.3, 1.2.4*)

Rationale:

Although the recording of smoking status has improved, the referral to behavioural change intervention and/or prescription of a stop smoking drug is poor. It is higher when the patient is seen by a respiratory specialist. Smoking cessation is the only intervention applicable to everyone with COPD that has a proven mortality benefit.

Tips to achieve this priority:

- > Take the opportunity at the time of hospital admission, a significant event, to emphasise the importance of smoking interventions.
- > Ensure stop smoking drugs are on the hospital formulary.
- > Provide early follow up for smokers who have successfully started a quit attempt during the admission.



Section 7: Acute observation

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Was a National Early Warning Score (NEWS2)^d score recorded for the patient?



73.0%



96.3%



95.4%



74.1%

Key findings

- 74.1% of patients had a NEWS2 score recorded.
- Recording of NEWS2 was lower in England (73.0%) than in Scotland (96.3%) and Wales (95.4%) where it was almost universal.
- 50.4% of admissions are in the lowest risk category.

^d NEWS2 is a national acuity score routinely collected on admission to hospital. Inclusion in NACAP was designed to inform on case-mix, and thus to help understand differences between units in terms of outcomes.



Section 8: Comorbidities

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Did the patient have a recorded history of cardiovascular disease?



37.4%



35.4%



45.6%



37.7%

Did the patient have a recorded history of mental illness?



15.9%



19.6%



23.3%



16.3%

Key findings

- 37.7% of patients had a history of **cardiovascular disease**, and 16.3% had a history of **mental illness**.
- **New interventions** were made in 21.4% of those with **cardiovascular disease** and 14.1% of those with **mental illness**.



Section 8: Discharge process

To see the data analysis in full, please access the data analysis and methodology report available at www.rcplondon.ac.uk/copd-2017-18

Was a discharge bundle completed for the admission?



76.5%



39.3%



13.8%



73.8%

Key standards:

[NICE Quality Standards, Chronic Obstructive Pulmonary Disease in adults \[QS10\] \(2016\), statement 8](#): (Placeholder) Hospital discharge care bundle.¹

Key findings

Discharge

- The lowest number of discharges took place on a weekend (**8.1% on Saturdays and 6.2% on Sundays**).

Discharge bundle

- **73.8%** of admissions received a **discharge bundle** (a significant increase over 67.2% in 2017/18).
- However, use of individual measures considered part of a bundle on discharge varied greatly. Only **70.4%** of patients had their **inhaler technique checked**, and only **56.0%** were **assessed for suitability for pulmonary rehabilitation** despite these being standard components of a discharge bundle.
- **9%** of patients had care **discussed at an MDT meeting** with a local community team.

Case study: Royal Free London NHS Foundation Trust and the Camden COPD and Home Oxygen Service



- To promote communication between the inpatient and community respiratory teams, the weekly multidisciplinary meeting is now held face-to-face on the respiratory ward.
- We specifically talk about components of the discharge bundle and how to safely transition patients from inpatient care back to the community.
- It is also an opportunity to access primary care and community spirometry to confirm that patients being managed as exacerbations of COPD have a robust COPD diagnosis. If not, we aim to perform pre-discharge spirometry to rule in or rule out airflow obstruction.

All COPD patients at Royal Free London NHS Foundation Trust and Camden COPD and Home Oxygen Service are discussed at a **multidisciplinary (MDT) meeting** prior to being discharged.

Appendix A: NICE Quality standard [QS10] – Chronic obstructive pulmonary disease in adults

Please note, in 2016 this quality standard was updated and statements prioritised in 2011 were either updated or replaced. To see the full quality standard please use the following link:

www.nice.org.uk/guidance/qs10.

No.	Quality statement
1	People aged over 35 years who present with a risk factor and one or more symptoms of COPD have post-bronchodilator spirometry. [2011, updated 2016]
2	People with COPD who are prescribed an inhaler have their inhaler technique assessed when starting treatment and then regularly during treatment. [2011, updated 2016]
3	People with stable COPD and a persistent resting stable oxygen saturation level of 92% or less have their arterial blood gases measured to assess whether they need long-term oxygen therapy. [2011, updated 2016]
4	People with stable COPD and exercise limitation due to breathlessness are referred to a pulmonary rehabilitation programme. [2011, updated 2016]
5	People admitted to hospital for an acute exacerbation of COPD start a pulmonary rehabilitation programme within 4 weeks of discharge. [2011, updated 2016]
6	People receiving emergency oxygen for an acute exacerbation of COPD have oxygen saturation levels maintained between 88% and 92%. [new 2016]
7	People with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical therapy have non-invasive ventilation. [2011, updated 2016]
8	(Placeholder ^e) Hospital discharge care bundle. [new 2016]

Statements from the 2011 quality standard for COPD that may still be useful at a local level, but are no longer considered national priorities for improvement:

- People with COPD have a current individualised comprehensive management plan, which includes high-quality information and educational material about the condition and its management, relevant to the stage of disease.
- People with COPD have a comprehensive clinical and 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 comorbidities.
- People with COPD who smoke are regularly encouraged to stop and are offered the full range of evidence based smoking cessation support.
- People who have had an exacerbation of COPD are provided with individualised 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.

^e A placeholder statement is an area of care that has been prioritised by the Quality Standards Advisory Committee but for which no source guidance is currently available. A placeholder statement indicates the need for evidence-based guidance to be developed in this area.

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|---|
| <ul style="list-style-type: none">• People with COPD receiving long-term oxygen therapy are reviewed in accordance with NICE guidance, at least annually, by a specialist oxygen service as part of the integrated clinical management of their COPD. |
| <ul style="list-style-type: none">• 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. |
| <ul style="list-style-type: none">• People admitted to hospital with an exacerbation of COPD are reviewed within 2 weeks of discharge. |
| <ul style="list-style-type: none">• People with advanced COPD, and their carers, are identified and offered palliative care that addresses physical, social and emotional needs. |

Appendix B: NICE guideline [NG115] – Chronic obstructive pulmonary disease in over 16s: diagnosis and management

NICE clinical guideline [CG101], June 2010, was updated and replaced by NICE guideline [NG115] in December 2018. Below is a summary of the NICE guideline [NG115] sections referred to in this report. To see the full guideline please use the following link: www.nice.org.uk/guidance/NG115.

Recommendations marked [2004] or [2010] last had an evidence review in 2004 or 2010.

1.1	Diagnosing COPD
Spirometry	
1.1.4	Perform spirometry: <ul style="list-style-type: none"> > at diagnosis > to reconsider the diagnosis, for people who show an exceptionally good response to treatment > to monitor disease progression. [2004, amended 2018]
1.1.5	Measure post-bronchodilator spirometry to confirm the diagnosis of COPD. [2010]
1.1.6	Think about alternative diagnoses or investigations for older people who have an FEV1/FVC ratio below 0.7 but do not have typical symptoms of COPD. [2010]
1.1.7	Think about a diagnosis of COPD in younger people who have symptoms of COPD, even when their FEV1/FVC ratio is above 0.7. [2010]
1.1.8	All healthcare professionals who care for people with COPD should have access to spirometry and be competent in interpreting the results. [2004]
1.1.9	Spirometry can be performed by any healthcare worker who has had appropriate training and has up-to-date skills. [2004]
1.1.10	Spirometry services should be supported by quality control processes. [2004]
1.1.11	It is recommended that GLI 2012 reference values are used, but it is recognised that these values are not applicable for all ethnic groups. [2004, amended 2018]
Referral for specialist advice	
1.1.30	When clinically indicated, refer people for specialist advice. Referral may be appropriate at all stages of the disease and not solely in the most severely disabled people. [2004]
1.1.31	People who are referred do not always have to be seen by a respiratory physician. In some cases they may be seen by members of the COPD team who have appropriate training and expertise. [2004]
1.2	Managing stable COPD
1.2.1	For guidance on the management of multimorbidity, see the NICE guideline on multimorbidity . [2018]
Smoking cessation	
1.2.2	Document an up-to-date smoking history, including pack years smoked (number of cigarettes smoked per day, divided by 20, multiplied by the number of years smoked) for everyone with COPD. [2004]

1.2.3	At every opportunity, advise and encourage every person with COPD who is still smoking (regardless of their age) to stop, and offer them help to do so. [2004]
1.2.4	Unless contraindicated, offer nicotine replacement therapy, varenicline or bupropion as appropriate to people who want to stop smoking, combined with an appropriate support programme to optimise smoking quit rates for people with COPD. [2010]
1.2.5	For more guidance on helping people to quit smoking, see the NICE guideline on stop smoking interventions and services . [2010]
1.2.6	For more guidance on varenicline, see the NICE technology appraisal guidance on varenicline for smoking cessation . [2010]

Non-invasive ventilation

1.2.70	Refer people who are adequately treated but have chronic hypercapnic respiratory failure and have needed assisted ventilation (whether invasive or non-invasive) during an exacerbation, or who are hypercapnic or acidotic on long-term oxygen therapy, to a specialist centre for consideration of long-term non-invasive ventilation. [2004]
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1.3 Management of exacerbations of COPD

Oxygen therapy during exacerbations of COPD

1.3.27	Measure oxygen saturation in people with an exacerbation if there are no facilities to measure arterial blood gases. [2004]
1.3.28	If necessary, prescribe oxygen to keep the oxygen saturation of arterial blood (SaO ₂) within the individualised target range. [2010]
1.3.29	Pulse oximeters should be available to all healthcare professionals involved in the care of people with exacerbations of COPD, and they should be trained in their use. Clinicians should be aware that pulse oximetry gives no information about the PaCO ₂ or pH. [2004]
1.3.30	Measure arterial blood gases and note the inspired oxygen concentration in all people who arrive at hospital with an exacerbation of COPD. Repeat arterial blood gas measurements regularly, according to the response to treatment. [2004]

Non-invasive ventilation (NIV) and COPD exacerbations

1.3.31	Use NIV as the treatment of choice for persistent hypercapnic ventilatory failure during exacerbations despite optimal medical therapy. [2004]
1.3.32	It is recommended that NIV should be delivered in a dedicated setting, with staff who have been trained in its application, who are experienced in its use and who are aware of its limitations. [2004]
1.3.33	When people are started on NIV, there should be a clear plan covering what to do in the event of deterioration, and ceilings of therapy should be agreed. [2004]

Discharge planning

1.3.42	Measure spirometry in all people before discharge. [2004]
1.3.43	Re-establish people on their optimal maintenance bronchodilator therapy before discharge. [2004]
1.3.44	People who have had an episode of respiratory failure should have satisfactory oximetry or arterial blood gas results before discharge. [2004]
1.3.45	Assess all aspects of the routine care that people receive (including appropriateness and risk of side effects) before discharge. [2004]

1.3.46	Give people (or home carers) appropriate information to enable them to fully understand the correct use of medications, including oxygen, before discharge. [2004]
1.3.47	Make arrangements for follow-up and home care (such as visiting nurse, oxygen delivery or referral for other support) before discharge. [2004]
1.3.48	The person, their family and their physician should be confident that they can manage successfully before they are discharged. A formal activities of daily living assessment may be helpful when there is still doubt. [2004]

Appendix C: British Thoracic Society (BTS) Quality Standards for acute NIV in adults

Below is a summary of the BTS NIV Quality Standards, published April 2018, that are referred to within this report. To see the full standards and rationales please use the following link: www.brit-thoracic.org.uk/standards-of-care/quality-standards/bts-niv-quality-standards/.

No.	Quality statement
1	Acute non-invasive ventilation (NIV) should be offered to all patients who meet evidence-based criteria. Hospitals must ensure there is adequate capacity to provide NIV to all eligible patients.
2	All staff who prescribe, initiate or make changes to acute NIV treatment should have evidence of training and maintenance of competencies appropriate for their role.
3	Acute NIV should only be carried out in specified clinical areas designated for the delivery of acute NIV.
4	Patients who meet evidence-based criteria for acute NIV should start NIV within 60 min of the blood gas result associated with the clinical decision to provide NIV and within 120 min of hospital arrival for patients who present acutely.
5	All patients should have a documented escalation plan before starting treatment with acute NIV. Clinical progress should be reviewed by a healthcare professional with appropriate training and competence within 4 hours of starting NIV and by a consultant with training and competence in acute NIV within 14 hours of starting acute NIV.
6	All patients treated with acute NIV should have blood gas analysis performed within 2 hours of starting acute NIV. Failure of these blood gas measurements to improve should trigger specialist healthcare professional review within 30 min.

Appendix D: Document purpose

Document purpose	To disseminate the results of the national COPD clinical audit of people with COPD exacerbations admitted to acute hospitals in England and Wales 2018/19.
Title	COPD clinical audit 2018/19.
Authors	National Asthma and Chronic Obstructive Pulmonary Disease Audit Programme (NACAP), Royal College of Physicians
Publication date	July 2020
Audience	Healthcare professionals; NHS managers, chief executives and board members; service commissioners; policymakers and voluntary organisations.
Description	<p>This report presents the results of the cohort of patients discharged between 1 October 2018 and 30 September 2019.</p> <p>The information, key findings and recommendations outlined in the report are designed to provide readers with a basis for identifying areas that are in need of change and to facilitate the development of improvement programmes that are relevant not only to secondary care providers but also to commissioners and policymakers. There is no scheduled review date for the report.</p>
Supersedes	Hurst J, McMillan V, Mortier K, Shanahan L, Moussaif M, Adamson A, Stone P, Quint J, Roberts CM. <i>National Asthma and Chronic Obstructive Pulmonary Disease Audit Programme (NACAP). COPD clinical audit 2017/18 (people with COPD exacerbations discharged from acute hospitals in England and Wales between September 2017 and 2018). Clinical audit report</i> . London: RCP, 2019.
Contact	COPD@rcplondon.ac.uk

Appendix E: References

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