Royal College of Physicians | NACAP

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

Published May 2019

In association with:

ARNS Association of Respiratory Nurse Specialists; asthma UK; British Lung Foundation; British Thoracic Society; Imperial College London; PCRS Primary Care Respiratory Society; Royal College of General Practitioners; RCPCH Royal College of Paediatrics and Child Health; sam

Commissioned by:

HQIP Healthcare Quality Improvement Partnership

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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 2017/18
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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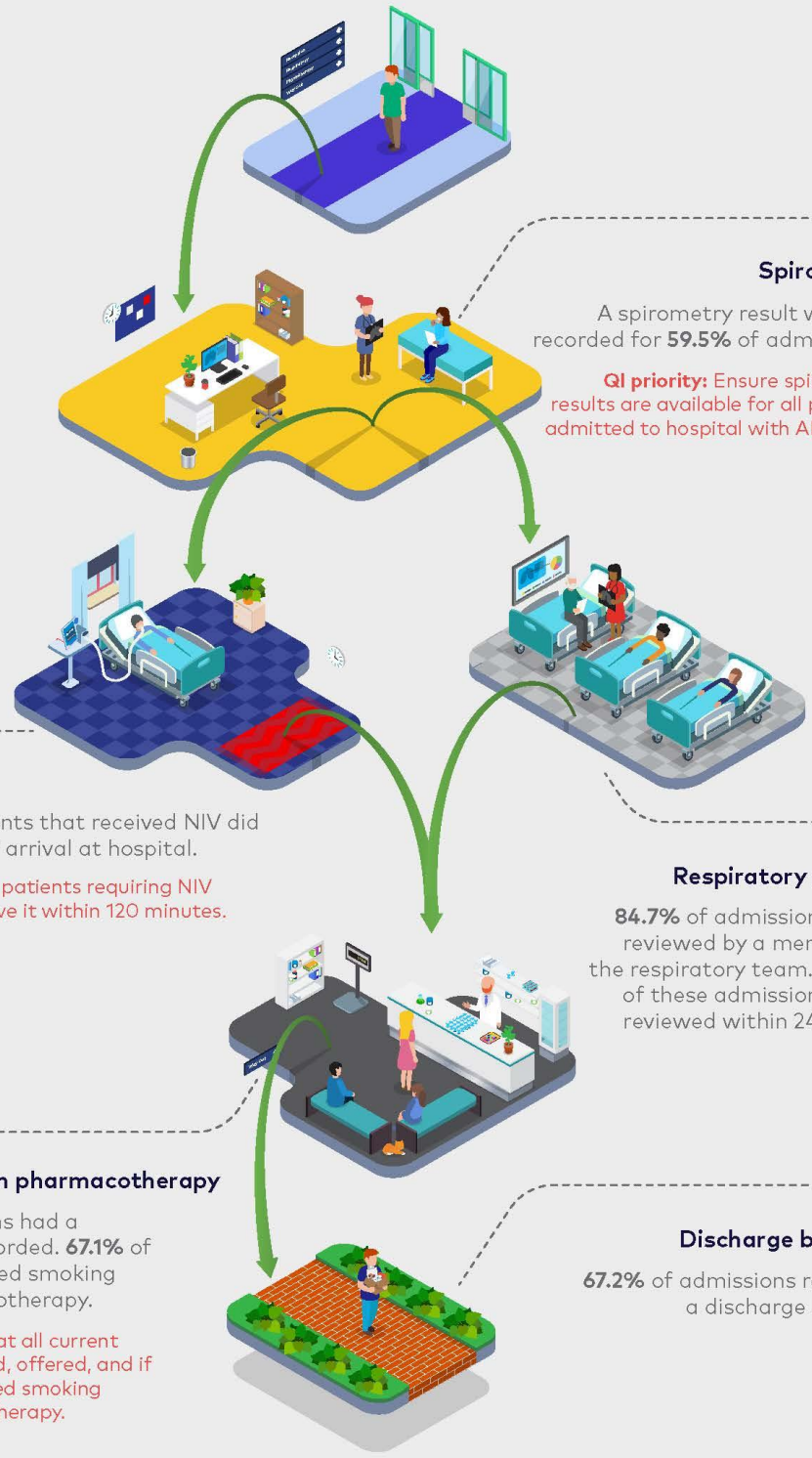

1

Spirometry

A spirometry result was not recorded for **59.5%** of admissions.

QI priority: Ensure spirometry results are available for all patients admitted to hospital with AECOPD.

2

NIV

Only **21.0%** of patients that received NIV did so within 2 hours of arrival at hospital.

QI priority: Ensure all patients requiring NIV on presentation receive it within 120 minutes.

3

Respiratory review

84.7% of admissions were reviewed by a member of the respiratory team. **64.0%** of these admissions were reviewed within 24 hours.

4

Smoking cessation pharmacotherapy

94.0% of admissions had a smoking status recorded. **67.1%** of smokers were offered smoking cessation pharmacotherapy.

QI priority: Ensure that all current smokers are identified, offered, and if they accept, prescribed smoking cessation pharmacotherapy.

5

Discharge bundles

67.2% of admissions received a discharge bundle.

How to use this report

The purpose of this report is to outline the key messages and recommendations from NACAP's latest round of the COPD clinical audit.* The COPD clinical audit, which captures the process and clinical outcomes of treatment in patients admitted to hospital in England and Wales with COPD exacerbations, launched on 1 February 2017. This report, which is the second report post-launch of continuous data collection, presents the results of the cohort of patients discharged between 14 September 2017 and 30 September 2018. Key process measures included in this report are provision of timely review by a member of the respiratory team, oxygen prescription, provision of non-invasive ventilation, spirometry, recording of smoking status and prescription of smoking cessation pharmacotherapy, DECAF scores (an indicator of the risk of mortality in hospital) and discharge processes. Key short-term outcome measures included in this report are length of stay and inpatient mortality. Comparisons to the results of the 2017 report (www.rcplondon.ac.uk/working-together) have been provided where appropriate. However, it should be noted that in 2017, in order for the report to be published in line with the National COPD Audit Programme's contract end date, the data were extracted prior to completion of a full year of data collection. Consequently, the 2017 report presented the results of a slightly truncated patient cohort (patients discharged over a 7.5 month period between 1 February and 13 September 2017).

In late 2019 / early 2020, an addendum to this report will be published detailing the longer-term outcomes of this patient cohort, namely 30- and 90-day mortality and hospital readmission rates.† Together, this report and its addendum will provide a comprehensive picture of the care provided to patients admitted to hospital with exacerbations of COPD and what happens after they are discharged.

This report's audience includes healthcare professionals; NHS managers, chief executives and board members; 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.

Key indicators, presenting results for England, Wales and both countries combined have been highlighted at the top of some of the sections of the report. These were selected based on national guidelines and standards. The indicators are the same as those presented in the nationally benchmarked results table in the data analysis and methodology report (see paragraph below for more information on this report). References to the appropriate National Institute for Health and Care Excellence (NICE) quality standards[1,2] (Appendix A), clinical guidelines[3] (Appendix B) and British Thoracic Society (BTS) non-invasive ventilation (NIV) quality standards[4] (Appendix C) are inserted throughout the key findings. The report also highlights the top three areas for quality improvement (QI) in 2019, and providers and commissioners should consider how these might best be delivered locally to the benefit of patients and the system.

* The other components of NACAP will report separately (adult asthma in winter 2019 and 2020, children and young people asthma in autumn 2020, and pulmonary rehabilitation in spring 2020).

† The longer-term outcomes of the first (2017) cohort of COPD audit patients can be found at www.rcplondon.ac.uk/working-together.

A separate data analysis and methodology report is available at: www.rcplondon.ac.uk/copd-2017-18. It contains the following:

- The full data analysis is presented with England, Wales and both countries combined results in tables and figures, with explanatory notes throughout. Although these data are available to the interested reader, it is not necessary to review them to appreciate the key messages.
- Nationally benchmarked results for participating hospitals. The indicators have been selected based on national guidelines and standards.
- Appendices, including the methodology for the audit.

Provider level audit data will also be made publicly available on www.data.gov.uk, in line with the government's transparency agenda. 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.

Foreword by John Hurst, COPD audit clinical lead

COPD is common, and exacerbations are burdensome both to people affected by the condition and to health services.[5,6] There is a long history of the audit of COPD care in the UK, dating back to 1997.[7,8] The COPD audit programme was transformed in February 2017 with the move to continuous audit, associated with real-time feedback of data to individual clinical teams allowing them to develop local quality improvement (QI) initiatives. We are now realising the benefits of this change: the data contained in this report represent an improvement in the quality of care received by people admitted to hospital with COPD exacerbations, and are a vindication of the hard work and dedication provided by multi-professional clinical teams across England and Wales. Thank you to everyone who has been involved in delivering this audit on the ground. The improvements here represent your hard work. This is the second report since the move to continuous audit, and contains data on **74,645** admissions across 179 hospitals in England and Wales. The median case ascertainment across both countries for the period 1 April 2017 to 31 March 2018 was **54.0%**. Based on a median length of stay of 4 days, this means clinical teams were responsible for caring for patients admitted with COPD for a total of approximately 600,000 bed days this year.[‡]

Let's be clear: we have a lot more to do. We aspire for the care delivered for every admission of COPD to meet recognised standards and guidelines regardless of where or when the admission takes place. The care delivered both within and between hospitals remains variable. The recording of diagnostic spirometry remains poor (just 40.5%). Support for smoking cessation is improving, however, only 67.1% of smokers were offered smoking cessation pharmacotherapy at a time where access to services is challenging. The proportion of people being treated with acute non-invasive ventilation (NIV) is 10.3%, yet of those that receive NIV only 21.0% receive it within 2 hours of arrival[§] despite the fact that late NIV is associated with longer length of stay. Consequently, timely NIV, spirometry and smoking cessation support remain our improvement priorities for 2019.

We should, however, pause to celebrate improvements in access to timely specialist care with 64.0% of patients seen by a respiratory specialist within 24 hours, and a reduction in the median time for this review (15 hours). This matters; the report provides evidence that seeing a specialist within 24 hours is associated with a reduction in inpatient mortality, increased use of smoking cessation pharmacotherapy and increased use of discharge bundles. In other good news, 67.2% of patients in this cohort received a discharge bundle. Such evidence provides a strong argument for investment in audit for those hospitals struggling to secure assistance, and investment in acute respiratory services.

Together we are improving the care of people with COPD and by continuing to work together we can embed these improvements and improve outcomes and experience further. Our patients deserve it.

[‡] This has been calculated by approximating the number of admissions for the year (74,645 × 2) and then multiplying by the median length of stay (4 days).
[§] The audit did not distinguish patients who deteriorated later in the admission and were appropriately managed with late NIV from those that presented with an acidosis and received inappropriate late NIV.

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

Admission and demographics

- A higher proportion of **COPD admissions** were females (53.3%) (51.3% in 2017).
- The median **age at admission** was **73 years**, which remains unchanged since 2017.
- The highest proportion of **COPD admissions** were from the **most deprived areas** in **England (34.2%) and Wales (39.2%)** compared with 33.1% and 38.4% respectively in 2017.
- The **median time from arrival to admission** was **3.9 hours** (3.4 hours in 2017).
- **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 the same at **4 days**.

Inpatient mortality

- **Inpatient mortality remained stable** at 3.8% compared with 3.9% reported in 2017. This outcome measure** is reported as it is a proxy for the provision of quality care.[9]

Case ascertainment

- The **median case ascertainment** for the period **14 September 2017** to **30 September 2018** was **53.7%.**†† Possible reasons why this figure is lower than may be expected include:
  - Patients with COPD tend to be admitted across the hospital, rather than solely to respiratory wards. This can make local case identification challenging.
  - The volume of admitted cases (over 140,000 per annum[10]) is high, which poses a considerable administrative challenge for local teams to enter into the audit.
  - Local coding procedures which can make retrospective case identification difficult, such as potential over-coding of COPD admissions (falsely reducing case

** Longer-term (30- and 90-day) outcomes including readmission and mortality will be presented in an addendum to this report to be published at the end of 2019.

†† All data presented in this report should be reviewed taking into account that 44.3% of cases reported by Hospital Episode Statistics (HES) and the Patient Episode Database for Wales (PEDW) have not been included in the audit. However, notwithstanding this, the large number of records included provide sufficient statistical power to ensure confidence in the data presented. There is also no evidence of any geographical correlation with low case ascertainment.

ascertainment) due to the frequent overlap between respiratory tract infections (eg pneumonia) and COPD exacerbations.

Section 2: Provision of timely care

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?

64.7% **43.1%** **64.0%**

Acute physician review *(NICE [NG115] 1.1.31)*

- **86.2%** of admissions were reviewed by an **acute physician of grade specialty trainee 3 (ST3) or above** (compared with 82.3% in 2017).

Respiratory team review *(NICE [QS10], statement 10, 2011)*

- **84.7%** of admissions were **reviewed** by a member of the **respiratory team** compared with 78.0% in 2017. In addition, 64.0% of admissions were **reviewed within 24 hours** (54.8% in 2017).
- The median time from **admission to respiratory team review** was **15.0 hours** (16.2 hours in 2017).
- Respiratory team review was associated with:
  - **inpatient mortality**; patients who **received a specialist review** were **14% less likely** to die as an inpatient compared with those who did not receive a review within 24 hours.
  - **smoking cessation pharmacotherapy**; smokers who received a specialist review at any time during their admission were over **six times more likely** to be offered smoking cessation pharmacotherapy compared with those who did not receive a review.
  - **discharge bundles**; patients who received a specialist review were **over 30 times more likely** to receive a discharge bundle compared with those who did not receive a review.
- Respiratory team review within 24 hours had an impact on:
  - **oxygen prescription**; patients who received a **specialist review within 24 hours** and required oxygen were **65% more likely** to receive it compared with those who received a review after 24 hours.
  - **smoking cessation pharmacotherapy;** smokers who received a specialist review within 24 hours were 2.5 times more likely to be offered smoking cessation pharmacotherapy compared with those who received a review after 24 hours.
  - **discharge bundles**; patients who received a specialist review within 24 hours **were nearly six times more likely** to receive a discharge bundle compared with those who received a review after 24 hours.

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 to those patients that required it?

72.7% **53.2%** **72.0%**

- **72.0%** of admissions **requiring oxygen** were **prescribed** it.[‡‡] *(NICE [NG115]1.3.28 / NICE [QS10] statement 6)*
- Only **2.7%** of admissions that had oxygen prescribed did **not have a target range stipulated,** compared with 3.2% reported in 2017.

Section 4: Non-invasive ventilation (NIV)

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?

21.2% **18.5%** **21.0%**

- 10.3% of admissions **received acute treatment with NIV** compared with 10.9% in 2017. *(NICE [NG115] 1.2.70, 1.3.31)*
  - Of those that received it only **21.0% received it within 2 hours of arrival** at hospital.[§§]
- The median time from arrival at hospital to acute treatment with NIV was **4.6 hours** (4.3 hours in 2017); however the interquartile range was **1.8 to 13.4 hours** (1.7 to 13.6 hours in 2017) which suggests a high degree of variability. *(NICE [QS10] statement 7)*
- Patients who received acute treatment with NIV between 2 and 24 hours after they arrived at hospital were **23% more likely** to have a length of stay greater than 4 days relative to patients receiving NIV in less than 2 hours.

[‡‡] Oxygen should be prescribed to ensure people are given safe amounts of oxygen however we are aware that in some cases it is administered to the patient without prescription.
[§§] Comparative data from the 2017 audit cannot be reported here as the recommended time from arrival to acute treatment with NIV changed from 3 to 2 hours in line with new quality standards.

1 **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.[11] There remains significant variability in the speed at which hospitals administer NIV that is unexplained, suggesting that it relates to process of care.

Tips to achieve this priority:

> Ensure close working relationships with accident and emergency (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.

Case study: Pinderfields Hospital (Mid Yorkshire Hospitals NHS Trust)

50% (median) of patients at Pinderfields Hospital that **required NIV received it within 2 hours of arrival** which is in the upper quartile of trust results for this period of the audit.

- Since the launch of the continuous audit in February 2017, two of the respiratory services at Mid Yorkshire Trust have merged (Dewsbury and District Hospital and Pinderfields General Hospital).
- This has meant that all patients requiring acute treatment with NIV are cared for in a dedicated acute care unit rather than just on the respiratory ward, as previously at Dewsbury and District Hospital.
- The acute care unit has increased from 11 to 14 beds and is led by a 7-day respiratory consultant service with a high nursing ratio.
- There has also been a change to include a 24-hour respiratory consultant on-call service.
- Daily respiratory ward rounds take place on the medical admission units.
- An NIV checklist for patients is available on hospital intranet A&E guidelines.

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?

41.0% **26.2%** **40.5%**

- A **spirometry** result was **not recorded for 59.5%** of admissions, compared with 60.3% in 2017. *(NICE [NG115] 1.1.4, 1.1.5 / NICE [QS10] statement 1)*
- **12.1%** of admissions with a spirometry result recorded had **no evidence of airflow obstruction despite being managed for COPD exacerbation**, similar to the 12.4% recorded in 2017.

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.

Case study: Royal Bournemouth Hospital (The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust)

- Every patient has their notes reviewed checking for recent spirometry.
- If there is no spirometry available or the spirometry is inconclusive, the team are able to access inpatient spirometry via the lung function test department or the integrated respiratory service.
- There has been a big focus on teaching activities locally to ensure that the diagnosis of COPD has been made with spirometry.

94% (median) of patients at Royal Bournemouth Hospital had a **spirometry result available** which is in the upper quartile of trust results for this period of the audit.

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 prescribed smoking cessation pharmacotherapy during the current admission?

25.4% **32.7%** **25.7%**

- **94.0%** of admissions had a **smoking status recorded** (90.9% in 2017). *(NICE [NG115] 1.2.2, 1.2.3)*
  - **32.3%** of admissions were **current smokers** (31.3% in 2017).
- 67.1% of current smokers were **offered smoking cessation pharmacotherapy** during their admission (61.0% in 2017).
  - 25.7% of those offered accepted (25.1% in 2017), however, 41.1% declined pharmacotherapy (35.9% in 2017).

3 **QI priority:** Ensure that all current smokers are identified, offered, and if they accept, prescribed smoking cessation pharmacotherapy. (*NICE [NG115] 1.2.3, 1.2.4*)

Rationale:

Although the recording of smoking status has improved, the prescribing of smoking cessation pharmacotherapy remains 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 cessation.
- Ensure smoking cessation pharmacotherapy is on the hospital formulary.
- Provide early smoking cessation follow up for smokers who have successfully started a quit attempt during the admission.

Case study: Queen Alexandra Hospital (Portsmouth Hospitals NHS Trust)

- Since September 2017 Queen Alexandra Hospital has had a designated COPD specialist team of nurses and physiotherapists who aim to review those admitted with an exacerbation of COPD within 24 hours of admission and ensure they are receiving optimal treatment.
- All current smokers (including those who have smoked in the last 6 weeks, or who use an e-cigarette/vape) receive very brief advice (VBA)*** on smoking and are offered nicotine replacement therapy (NRT) for use during their stay in hospital.
- NRT is prescribed according to a trust NRT drug therapy guideline which assesses dependency and guides choice of single or dual NRT products.
- Also, as part of the COPD discharge bundle, appropriate patients receive further VBA and are offered the opportunity to be referred to their local smoking cessation service.
- Patients are discharged with a 2-week supply of NRT if they have agreed to a prescription during their hospital stay.
- Local smoking cessation services often contact the patient within 24 hours of referral being sent.

89% (median) of COPD patients that are smokers at Queen Alexandra Hospital were **prescribed smoking cessation pharmacotherapy** which is in the upper quartile of trust results for this period of the audit.

*** 'Very brief advice on smoking' (VBA) is part of the work of the National Centre for Smoking Cessation and Training (NCSCT) and is funded by the Department of Health. It is a simple piece of advice that is designed to be used opportunistically in less than 30 seconds in almost any situation with a smoker.

Section 7: Dyspnoea, eosinopenia, consolidation, acidaemia and atrial fibrillation (DECAF) score

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

- The **DECAF score** is a predictor of mortality in patients hospitalised with an acute exacerbation of COPD. It combines the five strongest predictors of mortality (extended Medical Research Council dyspnoea score, eosinopenia, consolidation, acidaemia and atrial fibrillation) and may assist clinical decision making with regard to hospital discharge, escalation of care or early discussion of palliative care.[12]
- A **DECAF score** was recorded in **17.5%** of admissions compared with 14.5% reported in 2017.
- The DECAF score was originally included as a dataset item to allow case mix adjustment. However as the score was so poorly completed it could not be used in this way. To see the recorded DECAF scores please refer to the data analysis and methodology report.

Section 8: Discharge processes

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 British Thoracic Society (BTS), or equivalent, discharge bundle completed for the admission?

69.4% **8.3%** **67.2%**

Discharge

- The lowest number of discharges took place on a weekend (**8.3% on Saturdays and 6.4% on Sundays**).
- **67.2%** of admissions received a **discharge bundle** (53.0% in 2017). *(NICE [QS10] statement 8)*

Follow up

- **16.3% of admissions had 'no follow-up arrangements apparent'** selected as a response in the dataset (18.8% in 2017)**.**

Recommendations

For providers

We defined three key QI priorities for 2018. They were chosen on a strong evidence base for their effectiveness in improving outcomes. These priorities still stand as there is still further improvement required:

1. **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)*
2. **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. **QI priority 3:** Ensure that all current smokers are identified, offered, and if they accept, prescribed smoking cessation pharmacotherapy. *(NICE [NG115] 1.2.3, 1.2.4)*

For commissioners / health boards / sustainability and transformation partnerships (STPs) and integrated care systems (ICSs)

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[†††].

For primary care

1. Support data sharing across primary, community and secondary care teams, notably in the provision of diagnostic spirometry.

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.

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 [2011, updated 2016] or replaced [new 2016]. 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[‡‡‡]) Hospital discharge care bundle. [new 2016]

[‡‡‡] 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.

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.
• 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.
• 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.
• People admitted to hospital with an exacerbation of COPD are reviewed within 2 weeks of discharge.
• 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 that are 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: • 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]

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 2017/18.
Title	COPD clinical audit 2017/18.
Authors	National Asthma and Chronic Obstructive Pulmonary Disease Audit Programme (NACAP), Royal College of Physicians
Publication date	9 May 2019
Audience	Healthcare professionals; NHS managers, chief executives and board members; service commissioners; policymakers and voluntary organisations.
Description	This report presents the results of the cohort of patients discharged between 14 September 2017 and 30 September 2018. 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.
Supersedes	Stone RA, McMillan V, K Mortier, Holzhauer-Barrie J, Robinson S, Stone P, Quint J, Roberts CM. *COPD: Working together. National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical audit of COPD exacerbations admitted to acute hospitals in England and Wales 2017.* National clinical audit report. London: RCP, April 2018.
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Appendix E: References

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