

Chronic obstructive pulmonary disease in adults

Quality standard

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This standard is based on NG115.

This standard should be read in conjunction with QS13, QS15, QS25, QS122, QS110 and QS207.

Quality statements

Statement 1 People aged over 35 years who present with a risk factor and 1 or more symptoms of chronic obstructive pulmonary disease (COPD) have post-bronchodilator spirometry. **[2011, updated 2016]**

Statement 2 People with COPD who are prescribed an inhaler have their inhaler technique assessed when starting or changing treatment and then at least annually during treatment. **[2011, updated 2023]**

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 (LTOT). **[2011, updated 2016]**

Statement 4 People with stable COPD and a score of 3 or above on the Medical Research Council (MRC) dyspnoea scale are referred to a pulmonary rehabilitation programme. **[2011, updated 2023]**

Statement 5 This statement has been removed and pulmonary rehabilitation after an acute exacerbation is now covered in statement 8. For more details, see [update information](#).

Statement 6 People receiving emergency oxygen for an acute exacerbation of COPD have their oxygen saturation levels maintained between 88% and 92%. **[2016]**

Statement 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]**

Statement 8 People discharged from hospital after an acute exacerbation of COPD receive a hospital discharge care bundle. **[new 2023]**

In 2023, this quality standard was updated and statements prioritised in 2011 and 2016 were updated (2011, updated 2016 or 2023), unchanged (2016) or replaced (new 2023). For more information, see [update information](#).

The [previous version of the quality standard for COPD](#) is available as a PDF.

Quality statement 1: Diagnosis with spirometry

Quality statement

People aged over 35 years who present with a risk factor and 1 or more symptoms of chronic obstructive pulmonary disease (COPD) have post-bronchodilator spirometry. [2011, updated 2016]

Rationale

A diagnosis of COPD is confirmed by post-bronchodilator spirometry supported by a quality-control process. To ensure early diagnosis, spirometry should be done in primary care when a person presents with a risk factor for COPD (which is usually smoking) and 1 or more symptoms of COPD (for example, exertional breathlessness, chronic cough, regular mucus production, frequent winter 'bronchitis', and wheezing).

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Structure

Evidence of local arrangements to ensure that healthcare professionals in primary care using post-bronchodilator spirometry are trained and competent in its use.

Data source: Evidence can be collected from information recorded locally by healthcare professionals and provider organisations, for example from staff training records or staff inclusion on the [Association for Respiratory Technology & Physiology Spirometry Register](https://www.nice.org.uk/terms-and-conditions#notice-of-rights).

Process

Proportion of people aged over 35 years presenting with a risk factor and 1 or more symptoms of COPD who have post-bronchodilator spirometry.

Numerator – the number in the denominator who have post-bronchodilator spirometry.

Denominator – the number of people aged over 35 years presenting with a risk factor and 1 or more symptoms of COPD.

Data source: NHS England's Quality and Outcomes Framework includes data on GP practices that have a register of patients with a clinical diagnosis of COPD whose diagnosis has been confirmed by a quality-assured post-bronchodilator spirometry FEV1/FVC ratio.

What the quality statement means for different audiences

Service providers (primary care services) ensure that post-bronchodilator spirometry supported by a quality-control process is carried out in people aged over 35 years who have a risk factor and 1 or more symptoms of COPD, to confirm diagnosis of COPD. Service providers ensure that healthcare professionals are trained and competent in performing and interpreting post-bronchodilator spirometry.

Healthcare professionals (in primary care services) ensure that they perform post-bronchodilator spirometry that is supported by a quality-control process in people aged over 35 years who have a risk factor and 1 or more symptoms of COPD, to confirm diagnosis of COPD. Healthcare professionals ensure they remain up to date with training and competencies in performing and interpreting post-bronchodilator spirometry.

Commissioners ensure that they commission services in which people aged over 35 years who present with a risk factor and 1 or more symptoms of COPD receive post-bronchodilator spirometry supported by a quality-control process to confirm a diagnosis of COPD.

People aged over 35 who have an increased risk of COPD and who have 1 or more symptoms of COPD are offered a test to check how well their lungs work (called

post-bronchodilator spirometry). This test is used to diagnose COPD. People are at an increased risk of COPD if they smoke or have smoked in the past, or if they have been exposed to harmful fumes, dust or chemicals, often at work. Symptoms of COPD include breathlessness, long-lasting cough, coughing up mucus, frequent winter 'bronchitis' and wheezing.

Source guidance

[Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115](#) (2018, updated 2019), recommendations 1.1.1, 1.1.5, 1.1.8 and 1.1.10

Definitions of terms used in this quality statement

Risk factors

Risk factors for COPD include:

- smoking history
- occupational exposure to harmful fumes, dust or chemicals
- exposure to fumes, such as biomass fuels.

[[NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#), recommendation 1.1.1 and expert opinion]

Symptoms of COPD

Symptoms of COPD are:

- exertional breathlessness
- chronic cough
- regular mucus production
- frequent winter 'bronchitis'
- wheeze.

[NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, recommendation 1.1.1]

Post-bronchodilator spirometry

Post-bronchodilator spirometry is used to identify abnormalities in lung volumes and air flow. Spirometry should be performed by a healthcare professional who has had appropriate training and who has up-to-date skills. The use of post-bronchodilator spirometry should be supported by quality-control processes. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, recommendations 1.1.9 and 1.1.10]

Quality statement 2: Inhaler technique

Quality statement

People with chronic obstructive pulmonary disease (COPD) who are prescribed an inhaler have their inhaler technique assessed when starting or changing treatment and then at least annually during treatment. **[2011, updated 2023]**

Rationale

Long-acting inhaled therapy is usually delivered using a handheld inhaler. People with COPD need to use their inhaler correctly to receive the optimal treatment dose. Assessing inhaler technique should happen at the first prescription once a person has been taught the correct technique, and then reassessed regularly (for example, at their annual review or if their treatment changes) throughout the duration of a person's treatment in primary, community and secondary care services. If necessary, technique should be corrected with training by a healthcare professional competent to do so.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

a) Proportion of people with COPD prescribed an inhaler who have their inhaler technique assessed at the start of treatment.

Numerator – the number in the denominator who have their inhaler technique assessed at the start of treatment.

Denominator – the number of people with COPD prescribed an inhaler.

Data source: Data can be collected from information recorded locally by healthcare

professionals and provider organisations, for example from patient electronic medical records.

b) Proportion of people with COPD prescribed an inhaler who have their inhaler technique assessed at their annual review.

Numerator – the number in the denominator whose last inhaler annual review was no longer than 12 months since the previous one or since inhaler initiation.

Denominator – the number of people with COPD who have been prescribed an inhaler.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient electronic medical records.

c) Proportion of people with COPD prescribed an inhaler who have their inhaler technique assessed after a change in treatment.

Numerator – the number in the denominator who had their inhaler technique assessed after a change in treatment.

Denominator – the number of people with COPD who have been prescribed an inhaler.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient electronic medical records.

Outcomes

a) Exacerbation rates.

Data source: The [Royal College of Physicians' National COPD Audit Programme](#) includes data on COPD exacerbation rates.

b) Hospital admissions for a COPD exacerbation.

Data source: [COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme](#) and [NHS Digital Hospital Episode Statistics](#) include data on

the number of people admitted to hospital with a primary diagnosis of a COPD exacerbation.

What the quality statement means for different audiences

Service providers (primary care services, community services and secondary care services) ensure that systems are in place and healthcare professionals are trained and competent to teach people with COPD who are prescribed an inhaler the correct inhaler technique and to assess their inhaler technique when starting or changing treatment and at least annually during their treatment.

Healthcare professionals (nurses, GPs, secondary care doctors, physiotherapists, occupational therapists and pharmacists) ensure that they provide training in the correct inhaler technique to people with COPD when they have been prescribed an inhaler. Healthcare professionals ensure that they assess the person's inhaler technique when starting or changing treatment and at least annually during their treatment.

Commissioners ensure that they commission services in which people with COPD who are prescribed an inhaler are trained and assessed in the correct inhaler technique when they start or change treatment, and have their technique reassessed at least annually.

People with COPD who are given an inhaler have a check to make sure that they can use it correctly when they start or change treatment and at least once a year at their annual review.

Source guidance

Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115 (2018, updated 2019), recommendations 1.2.19, 1.2.22, 1.2.23, 1.2.138 and 1.2.140

Equality and diversity considerations

Older people, or people with learning disabilities, physical disabilities or cognitive impairment may experience difficulties learning and retaining the adequate inhaler

technique to ensure that they get the optimal treatment dose. An individual patient assessment should be carried out before choosing the most appropriate device for delivery of inhaled therapy.

Quality statement 3: Assessment for long-term oxygen therapy

Quality statement

People with stable chronic obstructive pulmonary disease (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 (LTOT). **[2011, updated 2016]**

Rationale

LTOT is used to treat stable COPD in people who have developed daytime hypoxaemia. People with COPD and a persistent resting stable oxygen saturation of 92% or less should have an assessment to find out whether LTOT is suitable for them. LTOT can improve survival, pulmonary haemodynamics, polycythaemia and neuropsychological health.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

Proportion of people with stable COPD and a persistent resting stable oxygen saturation level of 92% or less who have their arterial blood gases measured to assess whether they need LTOT.

Numerator – the number in the denominator who have their arterial blood gases measured to assess whether they need LTOT.

Denominator – the number of people with stable COPD and a persistent resting stable oxygen saturation level of 92% or less.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

Outcomes

Hospital admissions for a COPD exacerbation.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme and NHS Digital Hospital Episode Statistics include data on the number of people admitted to hospital with a primary diagnosis of a COPD exacerbation.

What the quality statement means for different audiences

Service providers (primary and secondary care services) ensure that systems are in place for people with stable COPD and a persistent resting oxygen saturation level of 92% or less to have their arterial blood gases measured to assess whether they need LTOT.

Healthcare professionals ensure that they measure the arterial blood gases of people with stable COPD and a persisting resting oxygen saturation level of 92% or less to assess whether they need LTOT.

Commissioners ensure that they commission services in which people with stable COPD and a persisting resting oxygen saturation level of 92% or less have their arterial blood gases measured to assess whether they need LTOT.

People with COPD that is stable and who have low levels of oxygen in their blood (when checked using a device that clips to their finger) have this confirmed by a blood test, to assess whether they need long-term oxygen therapy. Long-term oxygen therapy is treatment with oxygen breathed in through a tube (placed just inside the nose) or a mask connected to an oxygen supply. It is usually given for at least 15 hours during the day or night.

Source guidance

- Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE

[guideline NG115](#) (2018, updated 2019), recommendations 1.2.55 and 1.2.56

- [British Thoracic Society. Guidelines for oxygen use in adults in healthcare and emergency settings](#) (2017), recommendation C1

Definitions

Stable COPD

The absence of any of the features of a recent acute exacerbation, such as worsening breathlessness, cough, increased mucus production and change in colour of mucus. [[NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#), section 1.2]

Persistent resting stable oxygen saturation

An oxygen saturation (measured with a pulse oximeter) that is persistently 92% or less when the person is in a chronic stable state and is at rest (is not and has not recently been exercising). [Expert opinion]

Long-term oxygen therapy (LTOT)

The provision of oxygen therapy for continuous use at home, usually given for at least 15 hours during the day or night. [Adapted from [NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#), recommendation 1.2.61]

Assessment for LTOT

Assessing people for LTOT should comprise measuring arterial blood gases on 2 occasions at least 3 weeks apart in people who have a confident diagnosis of COPD, who are receiving optimum medical management and whose COPD is stable. [[NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#), recommendation 1.2.56, and [British Thoracic Society's guideline for oxygen use in adults in healthcare and emergency settings](#), recommendation C1]

Equality and diversity considerations

Be aware that some pulse oximeters can underestimate or overestimate oxygen saturation levels, especially if the saturation level is borderline. Overestimation has been reported in people with dark skin. See also the [NHS England Patient Safety Alert on the risk of harm from inappropriate placement of pulse oximeter probes](#).

Quality statement 4: Pulmonary rehabilitation for stable COPD and exercise limitation

Quality statement

People with stable chronic obstructive pulmonary disease (COPD) and a score of 3 or above on the Medical Research Council (MRC) dyspnoea scale are referred to a pulmonary rehabilitation programme. **[2011, updated 2023]**

Rationale

People with stable COPD may experience exercise limitation because of breathlessness. Pulmonary rehabilitation programmes improve a person's exercise capacity, quality of life, symptoms and levels of anxiety and depression.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

a) Proportion of people with stable COPD and a score of 3 or above on the MRC dyspnoea scale who are referred to a pulmonary rehabilitation programme.

Numerator – the number in the denominator who are referred to a pulmonary rehabilitation programme.

Denominator – the number of people with stable COPD and a score of 3 or above on the MRC dyspnoea scale.

Data source: NHS England's Quality and Outcomes Framework includes data on people with COPD, a score of 3 or above on the MRC dyspnoea scale and a recorded offer of referral to a pulmonary rehabilitation programme (excluding those who have previously attended).

b) Proportion of attendances of people with stable COPD and a score of 3 or above on the MRC dyspnoea scale that result in the person completing a pulmonary rehabilitation programme.

Numerator – the number in the denominator that result in the person completing a pulmonary rehabilitation programme.

Denominator – the proportion of attendances of people with stable COPD and a score of 3 or above on the MRC dyspnoea scale at pulmonary rehabilitation programmes.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

What the quality statement means for different audiences

Service providers (secondary care and community services) ensure that systems are in place for people with stable COPD and a score of 3 or above on the MRC dyspnoea scale to be referred to a pulmonary rehabilitation programme.

Healthcare professionals refer people with stable COPD and a score of 3 or above on the MRC dyspnoea scale to a pulmonary rehabilitation programme.

Commissioners ensure that they commission services in which people with stable COPD and a score of 3 or above on the MRC dyspnoea scale are referred to a pulmonary rehabilitation programme.

People with COPD that is stable who have difficulty walking, have to walk slowly, and stop often or soon become breathless are referred to a pulmonary rehabilitation programme. This includes exercises, information about COPD, diet advice and support depending on the person's needs.

Source guidance

Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115 (2018, updated 2019), recommendations 1.2.80 and 1.2.81

Definitions of terms used in this quality statement

Medical Research Council (MRC) dyspnoea scale: grade 3 and above

A breathlessness of grade 3 is defined as 'walks slower than contemporaries on level ground because of breathlessness, or has to stop for breath when walking at own pace'. Grade 4 is defined as 'stops for breath after walking about 100 metres or after a few minutes on level ground'. Grade 5 is defined as 'too breathless to leave the house, or breathless when dressing or undressing'. [NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, recommendation 1.1.3]

Pulmonary rehabilitation programme

A multidisciplinary programme of care for people with chronic respiratory impairment that is individually tailored and designed to optimise each person's physical and social performance and autonomy.

Pulmonary rehabilitation programmes should be held at times that suit people with COPD and in locations that are easy for people with COPD to get to, and have good access for people with disabilities. Programmes should be available within a reasonable time from referral.

Programmes comprise individualised exercise programmes and education, and:

- are at least 6 weeks in duration and include a minimum of twice-weekly supervised sessions
- include supervised, individually tailored and prescribed, progressive exercise training including both aerobic and resistance training
- include a defined, structured education programme.

[Adapted from [NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#), recommendation 1.2.82 and 1.2.83, and the [British Thoracic Society's quality standard on pulmonary rehabilitation in adults](#)]

Equality and diversity considerations

Pulmonary rehabilitation is not suitable for people with unstable cardiac disease, locomotor or neurological difficulties precluding exercise such as severe arthritis or peripheral vascular disease, and people in a terminal phase of an illness or with significant cognitive or psychiatric impairment.

Quality statement 5: Pulmonary rehabilitation after an acute exacerbation

This statement has been removed and pulmonary rehabilitation after an acute exacerbation is now covered in statement 8. For more details, see [update information](#).

Quality statement 6: Emergency oxygen during an exacerbation

Quality statement

People receiving emergency oxygen for an acute exacerbation of chronic obstructive pulmonary disease (COPD) have their oxygen saturation levels maintained between 88% and 92%. [2016]

Rationale

During an exacerbation, people with COPD may experience a worsening of gas exchange in the lungs, which can lead to low blood oxygen levels. Emergency oxygen is often given during the treatment of an exacerbation, either in the community, during transfer to hospital in an ambulance or while being assessed at hospital.

In some people, uncontrolled oxygen therapy may reduce the depth and frequency of breathing, leading to a rise in blood carbon dioxide levels and a fall in the blood pH (acidosis). Controlled oxygen therapy must therefore be administered by a delivery device and at a flow rate that helps the oxygen saturation to be maintained between 88% and 92%.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

Proportion of people receiving emergency oxygen for an acute exacerbation of COPD who have their oxygen saturation levels maintained between 88% and 92%.

Numerator – the number in the denominator whose oxygen saturation levels are

maintained between 88% and 92%.

Denominator – the number of people with an acute exacerbation of COPD receiving emergency oxygen.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on the first recorded respiratory rate for a person following their arrival at hospital for a COPD exacerbation.

Outcomes

Frequency of non-invasive ventilation due to oxygen toxicity.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people receiving any supplemental oxygen when in hospital for a COPD exacerbation.

What the quality statement means for different audiences

Service providers (community and secondary care services, ambulance trusts, A&E departments) ensure that devices and flow rates are used to enable oxygen saturation levels to be maintained between 88% and 92% in people receiving emergency oxygen for an acute exacerbation of COPD.

Healthcare professionals ensure that devices and flow rates are used to enable oxygen saturation levels to be maintained between 88% and 92% in people receiving emergency oxygen for an acute exacerbation of COPD.

Commissioners ensure that they commission services that use devices and flow rates to enable oxygen saturation levels to be maintained between 88% and 92% in people receiving emergency oxygen for an acute exacerbation of COPD.

People with COPD who need emergency oxygen because of a sudden flare up of their symptoms (called an acute exacerbation) receive the correct amount of oxygen to keep the oxygen levels in their blood at a safe level.

Source guidance

Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115 (2018, updated 2019), recommendation 1.3.26, 1.3.27 and 1.3.29

Definition of terms used in this quality statement

Acute exacerbation

An exacerbation is a sustained worsening of a person's symptoms from their stable state beyond usual day-to-day variations and is acute in onset. Commonly reported symptoms are worsening breathlessness, cough, increased mucus production and change in the colour of the mucus. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, terms used in this guideline]

Quality statement 7: Non-invasive ventilation

Quality statement

People with an acute exacerbation of chronic obstructive pulmonary disease (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]**

Rationale

Non-invasive ventilation is used to treat persistent hypercapnic ventilatory failure and acidosis during an exacerbation of COPD, when a person's arterial blood gases (especially the pH and carbon dioxide levels) are not responding (or worsening) despite optimal medical management. Non-invasive ventilation should be delivered in a dedicated setting by staff trained and experienced in its use because of safety concerns with using the equipment.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

Proportion of people with an exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical treatment who have non-invasive ventilation.

Numerator – the number in the denominator who have non-invasive ventilation.

Denominator – the number of people with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical

therapy.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people receiving a continued diagnosis of acidotic hypercapnic ventilatory failure according to their blood gases after receiving 1 hour of optimal treatment, and on people receiving treatment with non-invasive ventilation.

Outcome

Mortality rates.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people who died while in hospital from a COPD exacerbation.

What the quality statement means for different audiences

Service providers (secondary care services and A&E departments) ensure that people with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical treatment have non-invasive ventilation.

Healthcare professionals ensure that people with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical treatment have non-invasive ventilation. Healthcare professionals are trained and experienced in using non-invasive ventilation.

Commissioners ensure that they commission services in which people with an acute exacerbation of COPD and persistent acidotic hypercapnic ventilatory failure that is not improving after 1 hour of optimal medical treatment have non-invasive ventilation.

People with COPD who have 'ventilatory failure' during a sudden flare up of their symptoms (called an acute exacerbation) are given an emergency treatment called non-invasive ventilation if they do not improve after 1 hour of treatment with medicine and oxygen. Ventilatory failure happens when a person cannot breathe deeply enough and

waste carbon dioxide builds up in the blood, causing acid to form. Non-invasive ventilation involves wearing a mask connected to a machine that pumps oxygen into the lungs.

Source guidance

Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115 (2018, updated 2019), recommendation 1.3.30 and 1.3.31

Definitions of terms used in this quality statement

Acute exacerbation

An exacerbation is a sustained worsening of a person's symptoms from their stable state, and which is beyond usual day-to-day variations and acute in onset. Commonly reported symptoms are worsening breathlessness, cough, increased mucus production and change in mucus colour. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, terms used in this guideline]

Persistent acidotic hypercapnic ventilatory failure

Acute acidotic hypercapnic respiratory failure results from an inability of the respiratory system to provide sufficient alveolar ventilation to maintain a normal arterial PCO₂ and blood pH level. Coexistent hypoxaemia is usually mild and easily corrected. Conventionally, a pH of less than 7.35 and a PCO₂ greater than 6.5 kPa, persisting after initial medical therapy, define acute respiratory acidosis and have been used as threshold values for considering the use of non-invasive ventilation. More severe degrees of acidosis, such as pH of less than 7.25, have been used as a threshold for considering provision of invasive mechanical ventilation. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s and expert consensus]

Optimal medical therapy

Controlled oxygen therapy, nebulised bronchodilator therapy, systemic corticosteroids and antibiotics if indicated, in line with the NICE guideline. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s]

Non-invasive ventilation

Non-invasive ventilation is a method of providing ventilatory support that does not require an endotracheal tube. It is usually delivered through a mask that covers the nose or a mask covering the nose and the mouth.

Non-invasive ventilation should be given once it is recognised that a person is not responding to 1 hour of optimal medical therapy. [[NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#) and expert consensus]

Quality statement 8: Hospital discharge care bundle

Quality statement

People discharged from hospital after an acute exacerbation of chronic obstructive pulmonary disease (COPD) receive a hospital discharge care bundle. **[new 2023]**

Rationale

COPD hospital discharge care bundles are designed to ensure that every person leaving hospital receives the best care. After a hospital stay, several elements of ongoing care can improve health outcomes for a person with COPD. This ongoing care should start before the person is discharged from hospital.

Quality measures

The following measures can be used to assess the quality of care or service provision specified in the statement. They are examples of how the statement can be measured, and can be adapted and used flexibly.

Process

a) Proportion of people discharged from hospital after an acute exacerbation of COPD who understand their medication and inhaler use.

Numerator – the number in the denominator who understand their medication and inhaler use.

Denominator – the number of people discharged from hospital after an acute exacerbation of COPD.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people who have their medication assessed

and inhaler technique checked at discharge from hospital after a COPD exacerbation.

b) Proportion of people discharged from hospital after an acute exacerbation of COPD who receive a self-management plan.

Numerator – the number in the denominator who receive a self-management plan.

Denominator – the number of people discharged from hospital after an acute exacerbation of COPD.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people who have received a self-management plan at discharge from hospital after a COPD exacerbation.

c) Proportion of people discharged from hospital after an acute exacerbation of COPD who smoke and are referred to smoking cessation behavioural change.

Numerator – the number in the denominator who are referred to smoking cessation behavioural change.

Denominator – the number of people discharged from hospital after an acute exacerbation of COPD who smoke.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people who are referred to smoking cessation behavioural change at discharge from hospital after a COPD exacerbation.

d) Proportion of people discharged from hospital after an acute exacerbation of COPD whose condition is assessed for pulmonary rehabilitation suitability.

Numerator – the number in the denominator whose condition is assessed for pulmonary rehabilitation suitability.

Denominator – the number of people discharged from hospital after an acute exacerbation of COPD.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people whose condition is assessed for

pulmonary rehabilitation suitability at discharge from hospital after a COPD exacerbation.

e) Proportion of people discharged from hospital after an acute exacerbation of COPD who receive follow-up within 72 hours.

Numerator – the number in the denominator who receive follow-up within 72 hours.

Denominator – the number of people discharged from hospital after an acute exacerbation of COPD.

Data source: COPD secondary care reports of the Royal College of Physicians National Respiratory Audit Programme include data on people who receive follow-up within 72 hours of discharge from hospital after a COPD exacerbation.

Outcome

a) Hospital readmissions for acute exacerbations.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

b) Mortality rates.

Data source: Data can be collected from information recorded locally by healthcare professionals and provider organisations, for example from patient records.

What the quality statement means for different audiences

Service providers (secondary care and community services) ensure that systems are in place for people admitted to hospital for an acute exacerbation of COPD to receive a hospital discharge care bundle that covers understanding medication and inhaler use, a self-management plan, smoking cessation, referral to pulmonary rehabilitation if appropriate, and timely follow-up.

Healthcare professionals (respiratory team members, such as respiratory consultants, respiratory specialist nurses or physiotherapists, COPD nurses) ensure that they deliver to

people admitted to hospital for an acute exacerbation of COPD a hospital discharge care bundle that covers understanding medication and inhaler use, a self-management plan, smoking cessation, referral to pulmonary rehabilitation if appropriate, and timely follow-up.

Commissioners ensure that they commission services in which people admitted to hospital for an acute exacerbation of COPD receive a hospital discharge care bundle that covers understanding medication and inhaler use, a self-management plan, smoking cessation, referral to pulmonary rehabilitation if appropriate, and timely follow-up.

People with COPD who have had a hospital stay because of a sudden flare up of their symptoms (called an acute exacerbation) receive a hospital discharge care bundle that covers understanding their medication and how to use their inhaler, a self-management plan, information and advice on stopping smoking, referral to a pulmonary rehabilitation programme if it is right for them, and follow-up from their healthcare professional.

Source guidance

Chronic obstructive pulmonary disease in over 16s: diagnosis and management. NICE guideline NG115 (2018, updated 2019), recommendations 1.2.3, 1.2.23, 1.2.81, 1.2.121, 1.2.124, 1.2.138, 1.3.37, 1.3.45 and 1.3.46

Definitions of terms used in this quality statement

Acute exacerbation

An exacerbation is a sustained worsening of a person's symptoms from their usual stable state, which is beyond usual day-to-day variations and is acute in onset. Commonly reported symptoms are worsening breathlessness, cough, increased mucus production and change in mucus colour.

Exercise capacity and physical activity levels are impaired during and after an exacerbation, which contributes to skeletal muscle dysfunction, particularly in the lower limbs. [Adapted from NICE's guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s, terms used in this guideline, and the British Thoracic Society's guideline on pulmonary rehabilitation in adults]

Hospital discharge care bundle

A hospital discharge care bundle is a group of evidence-based elements of ongoing care that should be implemented or checked, and verified, on discharge from hospital. The discharge bundle should cover the following:

- understanding medication and inhaler use
- self-management plan
- smoking cessation
- referral to pulmonary rehabilitation if appropriate
- timely follow-up.

[Adapted from NHS England's 2022/23 National Tariff Payment System, Annex C: Guidance on best practice tariffs]

Update information

September 2023: Changes have been made to this quality standard following the annual review of quality standards. Statement 4 has been reworded to better reflect the guideline (marked **[2011, updated 2023]**). Statement 5 has been removed and included as an element of statement 8, and statement 8 (a placeholder statement) has been developed into a full statement (marked **[new 2023]**). Links, definitions, data sources and source guidance sections have also been updated throughout.

February 2016: This quality standard was updated and statements prioritised in 2011 were replaced.

Statements are marked as **[2016]** or **[2011, updated 2016]**:

- **[2016]** if the statement covers a new area for quality improvement
- **[2011, updated 2016]** if the statement covers an area for quality improvement included in the 2011 quality standard and has been updated.

Statements numbered 1, 3, 6, 8 and 11 in the 2011 version have been updated and included in the updated quality standard, marked as **[2011, updated 2016]**.

The [previous version of the quality standard for COPD](#) is available as a pdf.

Minor changes since publication

August 2019: Source guidance references have been updated to align this quality standard with the updated 2019 [NICE guideline on diagnosing and managing chronic obstructive pulmonary disease in over 16s](#).

December 2018: Source guidance references have been updated to align this quality standard with the updated 2018 NICE guideline on chronic obstructive pulmonary disease.

About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, and so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, this may not always be appropriate in practice. Taking account of safety, shared decision-making, choice and professional judgement, desired levels of achievement should be defined locally.

Information about [how NICE quality standards are developed](#) is available from the NICE website.

See our [webpage on quality standards advisory committees](#) for details about our standing committees. Information about the topic experts invited to join the standing members is available from the [webpage for this quality standard](#).

NICE has produced a [quality standard service improvement template](#) to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE guidance and quality standards apply in England and Wales. Decisions on how they apply in Scotland and Northern Ireland are made by the Scottish government and Northern Ireland Executive. NICE quality standards may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Resource impact

NICE quality standards should be achievable by local services. The potential resource impact is considered by the quality standards advisory committee, drawing on resource

impact work for the source guidance. Organisations are encouraged to use the [resource impact report for NICE's guideline on chronic obstructive pulmonary disease in over 16s](#) to help estimate local costs.

Diversity, equality and language

Equality issues were considered during development and [equality assessments for this quality standard](#) are available. Any specific issues identified during development of the quality statements are highlighted in each statement.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

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Endorsing organisation

This quality standard has been endorsed by NHS England, as required by the Health and Social Care Act (2012)

Supporting organisations

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or providing services are made aware of and encouraged to use the quality standard.

- [Society for Acute Medicine \(SAM\)](#)
- [Chartered Society of Physiotherapy](#)
- [Primary Care Respiratory Society](#)
- [British Thoracic Society \(BTS\)](#)
- [Royal College of General Practitioners \(RCGP\)](#)