



Royal College
of Physicians

NACAP

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

Adult asthma clinical audit 2019/20

Adults with asthma attacks discharged from hospitals in England,
Scotland and Wales between 1 April 2019 and 31 March 2020

Key findings for patients and carers

Published January 2021



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What is the NACAP?

The National Asthma and COPD (chronic obstructive pulmonary disease) Audit Programme (NACAP) is a programme of audits, co-created with patients and designed to support improvements in the quality of care, services and clinical outcomes for people with asthma and COPD. It includes collecting data from hospitals across England, Scotland and Wales to show which parts of asthma and COPD care are good and which parts could be better for patients.

The NACAP team works with patients, as well as healthcare professionals, and aspires to set out a vision for a service that puts patient needs first. A key element of the NACAP's collaboration with patients has been the selection of priorities, chosen by patients, that help define the improvement aims for the programme. You can find out more about how NACAP patient priorities have been selected at: www.rcplondon.ac.uk/nacap.

The programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and run by the Royal College of Physicians (RCP).

In association with:



Commissioned by:



What is the NACAP adult asthma clinical audit?

Since November 2018, the NACAP adult asthma clinical audit has been collecting information on the care provided in hospitals across England, Scotland and Wales for people aged 16 and over, who have been admitted to adult hospital services with an asthma attack.

Clinical audit is a term used to describe a process that seeks to improve patient care and outcomes by:^{*}

- > fully reviewing care against definite criteria set out in guidelines;
- > implementing change to improve care where it does not meet that standard (known as quality improvement).

The information collected by the adult asthma audit includes:

- > Personal (confidential) information (NHS/CHI number, date of birth, ethnicity, gender and postcode). Confidential information is required so that information collected as part of the audit can be linked to other sources (we call this linkage). Linkage allows us to track care if patients are treated at different times and in different places.
- > Information about the treatment and care that patients get when they arrive at hospital, during their stay and before they leave hospital. For example, whether they:
 - had a peak flow measurement taken
 - were seen by a respiratory specialist (any professional with training in asthma care. This could be a doctor, nurse, physiotherapist or pharmacist)
 - had a personalised asthma action plan issued or reviewed.

The information collected as part of the audit is compared with asthma care guidelines to understand how closely the care provided corresponded to guideline-defined standards and where it can be improved.[†]

What does this report include?

This report provides a summary of the key results and recommendations for patients and carers based on the 2019/20 adult asthma annual report, which collected data on adults who were admitted to hospital with an asthma attack and discharged between 1 April 2019 and 31 March 2020. The findings account for 19,360 separate patient admissions.

Please note that all percentages provided in this report are rounded to whole numbers. The national clinical audit report provides all percentages to one decimal place, and is available at: www.rcplondon.ac.uk/adult-asthma-2019-20.

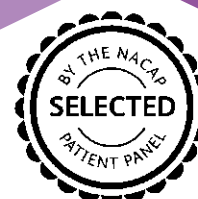
We would like to thank the NACAP patient panel for working with us and providing guidance and expertise in writing this booklet.

For further information on the NACAP and to read our annual reports visit www.rcplondon.ac.uk/nacap

Follow us on Twitter [@NACAPaudit](https://twitter.com/NACAPaudit)

^{*} For a detailed description of what clinical audit is, and the methods used to carry out clinical audit, please visit: www.england.nhs.uk/clinaudit

[†] More information about the audit and the use of the patient data collected can be found in the adult asthma patient information leaflet which is available at: www.rcplondon.ac.uk/nacap-adult-asthma



Patient story

Joanne, age 40

How and when were you diagnosed?

I was 30 years old when I was diagnosed with asthma in 2010. It was following a hospital stay for pneumonia. I was diagnosed by a hospital respiratory consultant.

When was your most recent admission?

The last time I was admitted was during the summer of 2020. I found that the hot weather made my breathing difficult, as I also suffer from hayfever and pollen levels are higher in the summer. Sometimes my asthma deteriorates when my hayfever is bad. I felt extremely tired, so I decided to take a nap, however difficulty breathing and a loud wheeze woke me up. The emergency services were called. The ambulance team initially tried to treat me at home but later decided to take me to hospital as the wheeze wasn't getting better – even after receiving nebulisers.*

The time before this was due to an anaphylactic reaction to the dye used in a magnetic resonance imaging (MRI) scan. This triggered an asthma attack which led to 4 days in hospital.

What was the best part of your asthma care?

The best part of the care I received was from the ambulance staff. They were fantastic! They dealt with me quickly and efficiently. They listened to my chest several times and worked through all of my symptoms, and kept me as calm as possible bearing in mind that I couldn't breathe properly.

Unfortunately, I cannot say the same for my hospital experience. The hospital that I normally go to is amazing and the staff deal with asthma attacks in such a great way. This time, however, I was taken to a different hospital where I feel that the level of care was poor!

What was your experience like?

I was given multiple nebulisers, magnesium drips, potassium tablets and steroids. My peak flow was taken after leaving the resuscitation area. My reading was low which meant that I should have been kept in hospital, however the doctor that saw me gave me a nebuliser and as soon as it was finished I had my peak flow taken. They then based their decision on the result and said that I could either stay or go home. I elected to go home as they didn't seem to know how to deal with asthma.

I was not seen by anyone from the respiratory team or emergency department for a review or asked if I knew how to take my inhalers. The doctors asked me what they needed to give me to treat me. This shocked me, as surely they should treat depending on what my symptoms are. This was poor, but it is the only time that I have ever had such poor care. I have been hospitalised on average twice a year since my diagnosis so I guess I am lucky this has only happened once.

At the hospital I normally go to when I have an asthma attack, I am always surprised at how great the level of care that I get is. I usually get treated as follows:

- > I get seen by a respiratory team member
- > My medication gets reviewed
- > The team checks that I am using my inhalers correctly
- > I receive a follow-up appointment as an outpatient
- > I receive a plan for discharge and what to do if I get worse.



* For more information on nebulisers, visit the British Lung Foundation website: www.blf.org.uk/support-for-you/nebulisers/what-is-it

Foreword



James Calvert,
adult asthma
audit clinical lead

Welcome to the second patient report from the National Adult Asthma Audit Programme. In this report we examine the quality of care received by 19,360 patients discharged from hospital in England, Scotland and Wales, following admission with an asthma attack between 1 April 2019 and 31 March 2020.

Since publication of the first report in December 2019, life has changed in ways that we could not have predicted 12 months ago. Across the UK, clinicians are working hard to develop new ways of delivering care that meets the challenges presented by COVID-19 while also ensuring that the needs of patients with other medical conditions are met. Now, more than ever, we must focus on the elements of medical practice that deliver the greatest value to patients admitted to hospital with an asthma attack.

The main priority identified by our patient panel was to ensure that every patient is seen by a member of the respiratory specialist team. The audit data clearly demonstrates the value for patients who benefit from a specialist review: patients are more likely to receive the best care; smokers are more likely to be offered assistance with stopping and patients are more likely to receive education on how to manage their asthma in the future. Patients are also more likely to receive follow up after discharge with a clinician experienced in management of their condition. At the time of writing, one in five patients do not receive a specialist review.

For care received in hospital, we decided to focus on the first hour of care and achieving a safe discharge. There are four elements to the first hour of care. Within 1 hour of admission to hospital, every patient

should have the severity of their asthma attack assessed and should receive nebulised/inhaled therapy (beta-2 (β_2) agonists) to help relieve their symptoms. They should also receive the first dose of systemic (tablet or injected) steroid treatment that will ultimately help them to recover. Finally, the sickest patients, who may require oxygen therapy, should receive this after a clinical assessment and an oxygen prescription. Each of these recommendations reflects published evidence for care that will ensure a rapid recovery for the patient. However, at present, only a minority receive all four elements.

Finally, we have worked with NHS policymakers to define what every patient should receive at the point of discharge from hospital. Some hospitals may deliver a 'care bundle', which is a method used to help busy clinical staff ensure that patients receive all elements of care, with nothing omitted. These elements of care are designed to reduce the risk of future asthma attacks and to allow patients to manage their condition at home successfully and independently. At present, only 38% of patients receive all these elements of care and 12% receive none of them. Joanne's story on page 4 also shows that there is still work to be done.

Development of this report has taken place with the generous assistance of patients on our patient panel, working collaboratively with the Royal College of Physicians (RCP) and a wide range of stakeholders. I am very grateful for their time and assistance. I am also grateful to the busy clinical staff who have continued to find the time to contribute to the audit. My particular thanks goes to all the staff at the RCP, who work tirelessly behind the scenes to ensure that the audit goes ahead, and national bodies such as Asthma UK, the British Lung Foundation and the British Thoracic Society who continue to focus on the needs of patients with asthma and other vulnerable members of our society with respiratory problems.

What to expect in hospital



- > Make sure you have **observations taken on arrival in hospital.** This should include a peak flow measurement, if you are well enough.



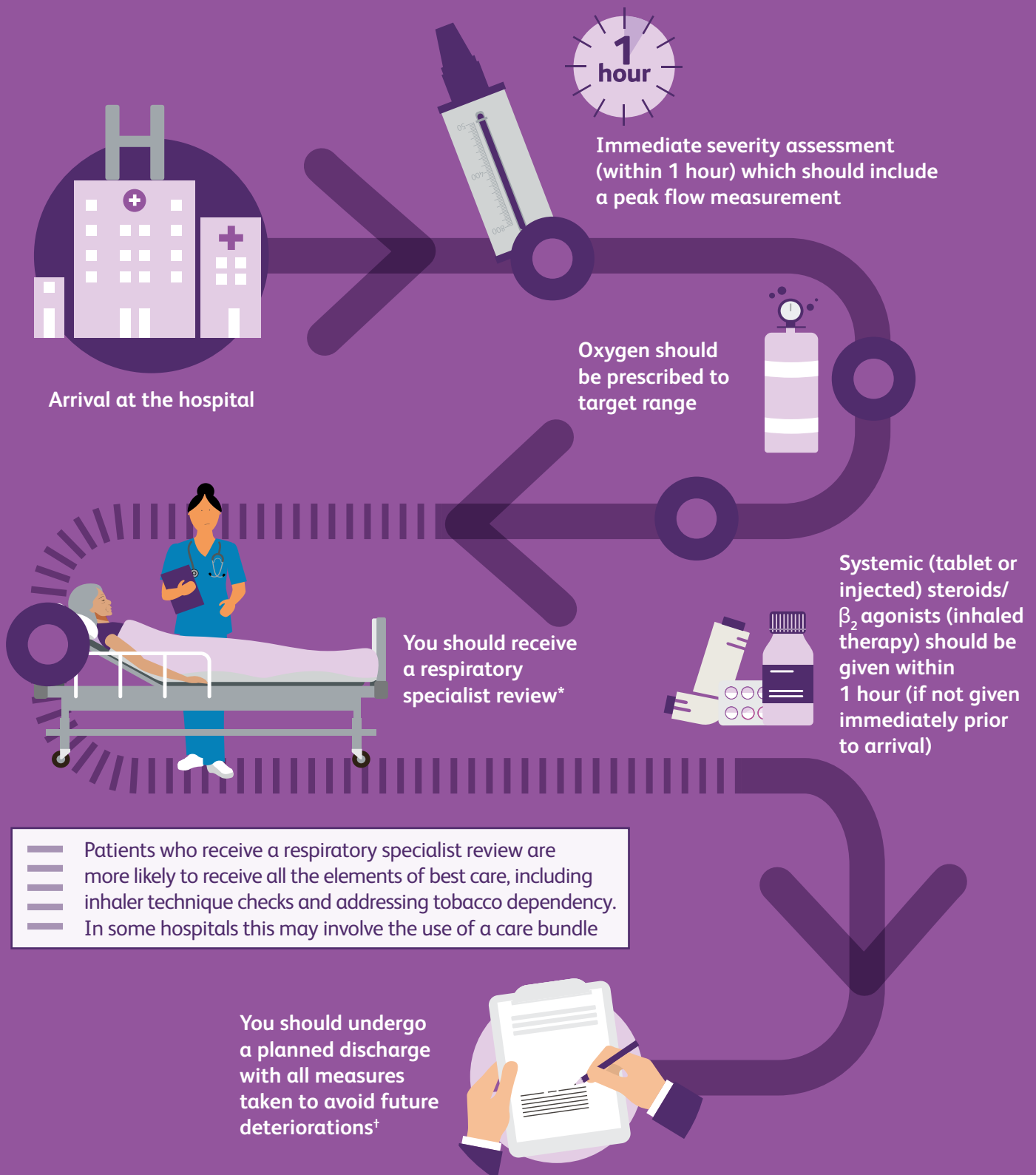
- > Make sure you have your **asthma treatment reviewed** by a professional trained in asthma care during your hospital stay.



- > Make sure you **receive a personalised asthma action plan.** Make sure you understand it, and follow the instructions in it when you leave hospital.

We hope this report makes you feel empowered when you go into hospital to ask for the care you are entitled to.

What should happen when you are admitted to hospital for an asthma attack



* A respiratory specialist is a healthcare professional who has special expertise in the care of people living with lung conditions such as asthma. They could be a doctor, nurse, pharmacist or physiotherapist.

† Guideline-defined care during a hospital admission includes: inhaler technique checked; review of regular maintenance medications; review that medication is taken as prescribed (medication adherence); issue/review of a personalised asthma action plan; reliance on tobacco discussed if the patient is a current smoker; follow-up appointments requested (community follow up within 2 working days and specialist review requested within 4 weeks).

Recommendations

Recommendations for adults living with asthma and their families and carers

- > Make sure you have an up-to-date personalised asthma action plan. One plan that is commonly used is the Asthma UK personalised asthma action plan available at www.asthma.org.uk/advice/manage-your-asthma/action-plan. Keep it somewhere convenient (or take a photo of it on your phone) and take it with you if you need to go to hospital for an asthma attack.
- > If you are admitted to hospital for an asthma attack, it is important to be seen by someone with training and skills in the care of people with asthma. This will usually be a member of the respiratory multidisciplinary team such as a respiratory consultant, respiratory nurse, respiratory physiotherapist or specialist pharmacist. If you are in hospital and haven't seen a member of the respiratory team within 24 hours of your arrival, you should ask if someone is available.
- > Following a stay in hospital, make sure that arrangements have been made for follow up after you have been discharged. You should be seen in the community within 2 working days of discharge and within 4 weeks in your hospital outpatient department. Sometimes the follow up may be by phone or via a video call.

What we are recommending for hospital teams*

- > Make sure that all patients have a severity assessment made on admission; this includes measurement of peak flow within 1 hour of arrival at hospital.
- > Make sure that all patients who have not received systemic steroids prior to arrival at hospital for their asthma attack receive this treatment within 1 hour of arrival at hospital.
- > Make sure that all patients admitted to hospital for an asthma attack are seen by a member of the respiratory specialist team before being discharged.
- > Ensure measures are in place to arrange follow up of patients following discharge. The highest risk patients are those who have had more than two courses of systemic steroids in the past year or who have required respiratory support in hospital. Their follow up should be prioritised.

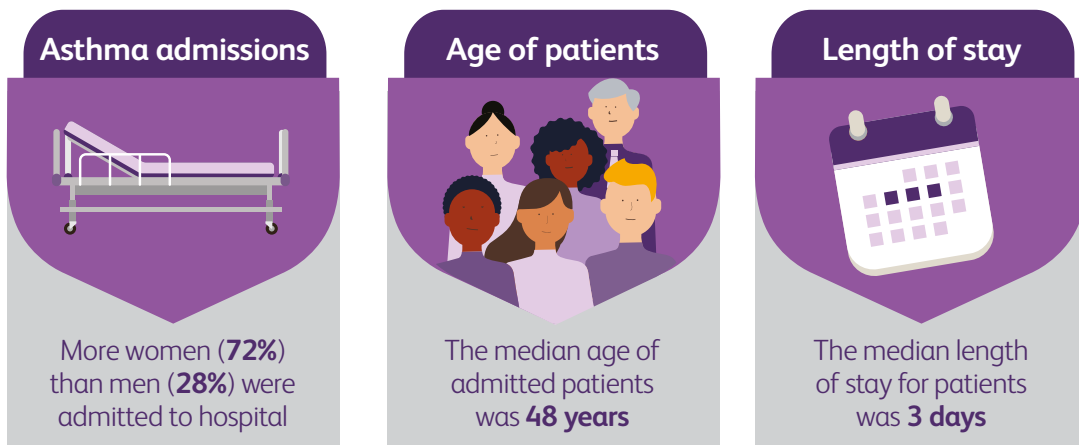
* We also make recommendations for healthcare commissioners (funders) and primary care teams (general practices). These can be found in the main national report which can be downloaded from: www.rcplondon.ac.uk/adult-asthma-2019-20.

Key findings

Understanding the population

As well as collecting data on the care that patients receive when they are in hospital for an asthma attack, the audit also captures some more general information about each patient, such as their age

and gender. This allows us to understand which patient groups are more likely to be admitted to hospital, or stay for a long time in hospital.



Good practice care on arrival at hospital

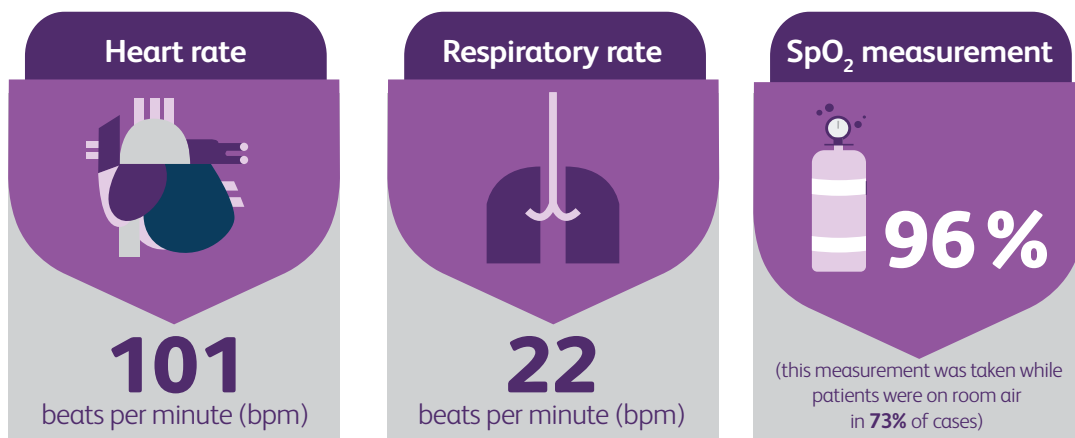
What should happen?

When patients come to hospital with an asthma attack, the hospital should assess the severity of the attack so the most appropriate care can be provided. Key things to measure include:

- > **heart rate** – the number of heart beats per unit of time
- > **respiratory rate** – the numbers of breaths taken within a set amount of time

- > **oxygen saturation (SpO₂)** – a measure of how much oxygen your blood is carrying. The target oxygen saturation range for most people with asthma is greater than 94%
- > whether the patient can complete sentences normally
- > peak flow.

The median results for first recorded assessments were:



Good practice care on arrival at hospital

The first hour of care

Peak flow: what should happen?

Measuring peak flow with a peak flow meter is a simple measurement of how quickly you can blow air out of your lungs. When the value is compared with a peak flow recorded when you are well, it tells you how narrowed your breathing tubes are during an asthma attack. It is used to help diagnose and monitor asthma and to assess the severity of asthma attacks.

One of the NACAP recommendations for hospital teams is to assess all patients for the severity of their asthma attack, including measurement of peak flow, within 1 hour of arrival at hospital.

In some instances, a patient may be too unwell to have their peak flow measurement taken on arrival, therefore there will always be a percentage of patients for which this target cannot be met. In the audit, 4% of patients were recorded as being too unwell to have their peak flow measured.



28%

of all patients had a peak flow measurement recorded within 1 hour of arrival at hospital



53%

of all patients had this taken within 4 hours of arrival at hospital



75%

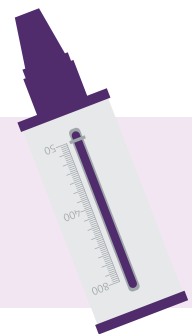
of patients had this taken at some point during admission to hospital

21%

of patients had no peak flow measurement recorded during their admission (4% of patients were recorded as too unwell to have their peak flow measurement taken)

Peak flow

Of the patients who had a peak flow measurement taken, 85% also had a previous best peak flow or predicted peak flow recorded. A record of best or predicted peak flow is important in deciding the severity of the asthma attack, and whether the patient should be admitted to hospital.



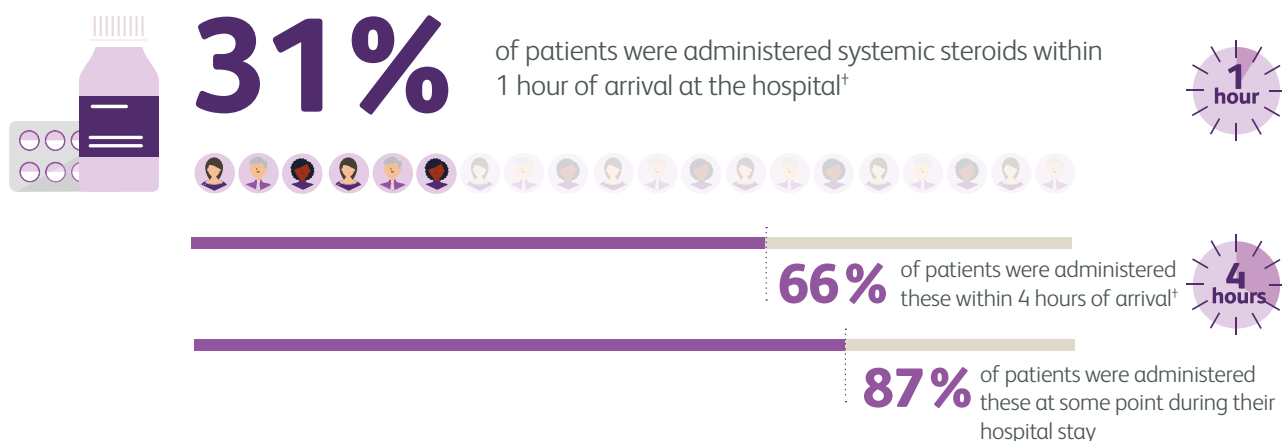
The first hour of care

Systemic (tablet or injected) steroids: what should happen?

When people have an asthma attack they should be given steroids in appropriate doses. Systemic steroids are given by tablet or injection and are anti-inflammatory medicines used to treat a range of conditions including asthma.* Steroid medicines commonly used for people with asthma include prednisolone or hydrocortisone.

One of the NACAP recommendations is that all patients arriving at hospital, who have not had steroids in the previous 24 hours, receive oral or intravenous steroids within 1 hour of arrival.

The audit did not collect information about whether people received steroids for their asthma attack before they arrived at hospital, for instance, at the GP surgery or in an ambulance. Please bear this in mind when looking at the percentages below. The numbers may be lower here because some patients may have already received steroid treatment prior to arrival.



* For more information on steroids, visit the NHS website: www.nhs.uk/conditions/steroids

† The audit did not collect data on the number of patients who received their first dose of systemic steroids before they arrived at hospital in this round of reporting, however this information will be collected for the next report.

The first hour of care

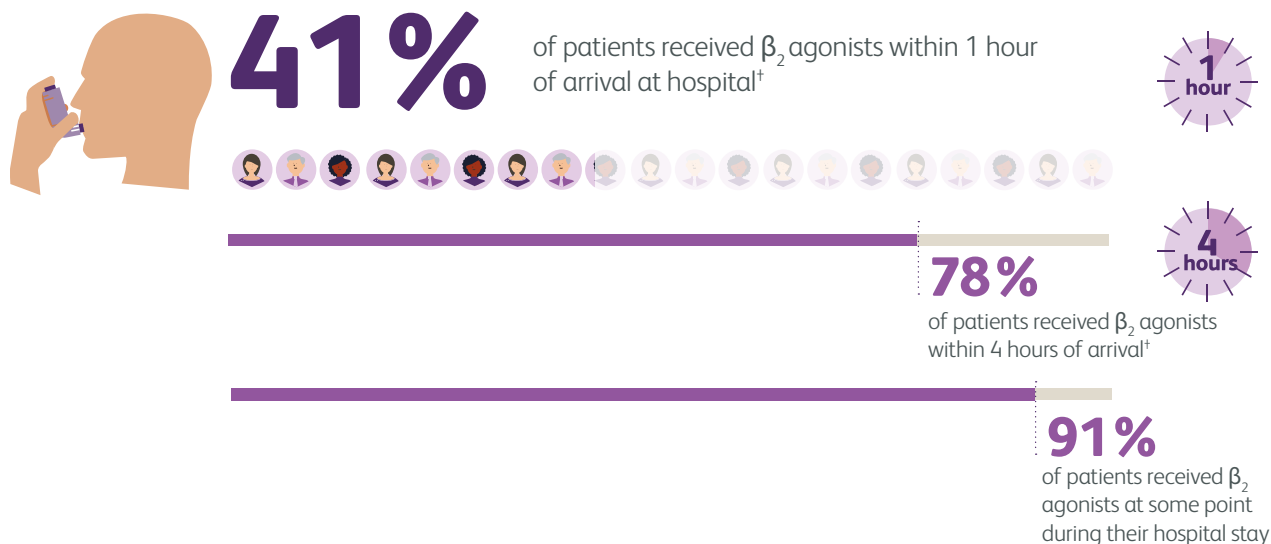
Beta-2 (β_2) agonists: what should happen?

Drugs called beta-2 (β_2) agonists are a type of medication that makes breathing easier by relaxing the muscles in the lungs and widening the airways. They include medicines such as salbutamol reliever inhalers (blue inhalers).

In an emergency situation they can be used as short-term relief from asthma attacks.* β_2 agonists are recommended as inhaled treatment for patients who present with asthma attacks and should be provided as soon as possible.

The audit did not collect information about whether people received β_2 agonists for their asthma attack before they arrived at hospital, for instance at the GP surgery or in an ambulance. Please bear this in mind when looking at the percentages below.

The numbers may be lower here because some patients may have already received β_2 agonist treatment prior to arrival.



Oxygen prescription: what should happen?

When people have an asthma attack, the levels of oxygen circulating in their blood may fall. When this happens, they should be offered extra oxygen (oxygen therapy) to correct this.

To ensure people are given safe amounts of oxygen, doctors should write a prescription (similar to the ones they write for other medications) which specifies a 'target range' for blood oxygen saturation to ensure that the right levels of oxygen are in the blood (not too much, not too little). The target range for most people with asthma is 94–98%.



17%
of patients were given oxygen without a prescription.

* For more information on bronchodilators visit the NHS website: www.nhs.uk/conditions/bronchodilators

† The audit did not collect data on the number of patients who received their first dose of β_2 agonists before they arrived at hospital in this round of reporting.

Respiratory specialist review

What should happen?

The adult asthma audit has shown that when members of the respiratory specialist team are involved in the care of someone admitted to hospital for an asthma attack, patients are more likely to receive guideline-defined care.

For example, patients were more likely to:

- > get their inhaler technique checked
- > get their regular (maintenance) medication reviewed
- > receive a personalised asthma action plan or have an existing one amended
- > have their asthma triggers discussed

- > get the appropriate follow-up appointments requested.

Therefore, one of the NACAP's recommendations for hospital teams is that all patients admitted for an asthma attack are seen by a member of the respiratory specialist team before they leave hospital. The NACAP patient panel selected this as the patient priority for the adult asthma clinical audit.

Patient priority

Timely access to review
by respiratory specialist



81%

of patients admitted were seen (reviewed) by a member of the respiratory specialist team before they left hospital



68% of these patients were seen within 24 hours of arrival at hospital on a **weekday**



56% of these patients were seen within 24 hours of arrival at hospital during the **weekend**



A **respiratory specialist team** is made up of healthcare professionals who have special expertise in the care of people living with lung conditions such as asthma. It may include doctors, nurses, pharmacists, physiotherapists and other staff.

Median time

The median time from arrival at hospital to being seen by a member of the respiratory team was 19 hours



First hour of care

Within the first hour of arrival at hospital with an asthma attack, you should:



Have a peak expiratory flow (PEF) measurement taken to assess how severe your asthma attack is

Receive systemic (injected or tablet) steroids



Have an assessment of how much oxygen is in your blood (oxygen saturation) and receive a prescription of an oxygen target saturation range of 94–98%

Receive beta-2 (β_2) agonists
> blue inhaler – salbutamol reliever



Good practice care before discharge from hospital

What should happen?

When someone is admitted to hospital for an asthma attack the hospital team should try and do everything they can to support the patient to keep their asthma under control and prevent further deteriorations and admissions to hospital.

There are several elements of guideline-defined care that hospitals should check and/or provide before the patient is discharged home. To make sure nothing gets forgotten, some hospitals use a document called a 'care bundle' to focus the efforts of patients and staff on the key elements of care set out in asthma guidelines.

38%



of patients received all **six of the following elements** of guideline-defined asthma care by discharge:

- 1 Inhaler technique checked
- 2 Review of regular maintenance medication
- 3 Review that medication is being taken as prescribed (medication adherence)
- 4 Review of an existing personalised asthma action plan or provision of a new plan*
- 5 Reliance on tobacco discussed if the patient is a current smoker
- 6 Follow-up appointments requested (community follow up within 2 working days and/or specialist review requested within 4 weeks)



People admitted to hospital for asthma attacks should receive all the elements of guideline-defined asthma care listed above. This includes having a community follow up within 2 working days and a specialist review requested within 4 weeks.

In the analysis, these two options of follow up were combined. How follow up takes place varies from area to area; in some places follow up will be on the telephone and in other places it may be face to face.

Medication at discharge

What should happen?

When patients are discharged following an asthma attack, it is important that they receive tablet or injected steroids and inhaled steroids before they go home to reduce the risk of a further attack.



of patients received **inhaled steroids** at discharge. **10% of patients** were therefore discharged **without a preventer inhaler**.



of patients were **prescribed at least 5 days of oral steroids** for treatment of their asthma attack.

* An example of an asthma action plan is available at: www.asthma.org.uk/advice/manage-your-asthma/action-plan

Referral for hospital review

What should happen?

Patients who have been admitted to hospital for an asthma attack should be referred for hospital assessment / follow up on discharge. Patients who have received more than two courses of oral steroids in the past 12 months should be referred to a specialist asthma service.



55%



of patients were **referred for hospital assessment / follow up**. A further **15%** of patients were already scheduled for an assessment in a hospital clinic.

11%



of patients who were prescribed more than two courses of oral steroids in the past 12 months were **not referred** for hospital follow up.

Smoking

What should happen?

It is very important that hospital staff ask all patients if they smoke and record their response in the medical records. In the audit, 92% of people with asthma had their smoking status recorded during the admission. For people with asthma who smoke, support should be offered to help them quit smoking before they are discharged from hospital. This could be with medicines, and/or with the help of a smoking cessation counsellor.



45%



of patients audited had **never smoked**.

23%



of patients audited were **current smokers**.

68%



of patients who smoked were given some **help to quit** while in hospital.

Current smokers

Patients who were current smokers were eight times more likely to be given help to quit smoking during their hospital stay if they were seen by a member of the respiratory specialist team.*

* For more information about why smoking is addictive and to get help to quit, visit: www.nhs.uk/common-health-questions/lifestyle/why-is-smoking-addictive

High-quality planned discharge

Following consultation between patients, NACAP, the British Thoracic Society and the British Lung Foundation-Asthma UK, the elements outlined below were identified as key elements of care that should be received by every patient.

The NHS has been working on an adult asthma best practice tariff (BPT) for hospitals in England. The plan is for this tariff to pay hospitals for the care they deliver against agreed metrics. The adult asthma BPT was due to start in early 2020, however, due to COVID-19 this has been pushed back to 2021.

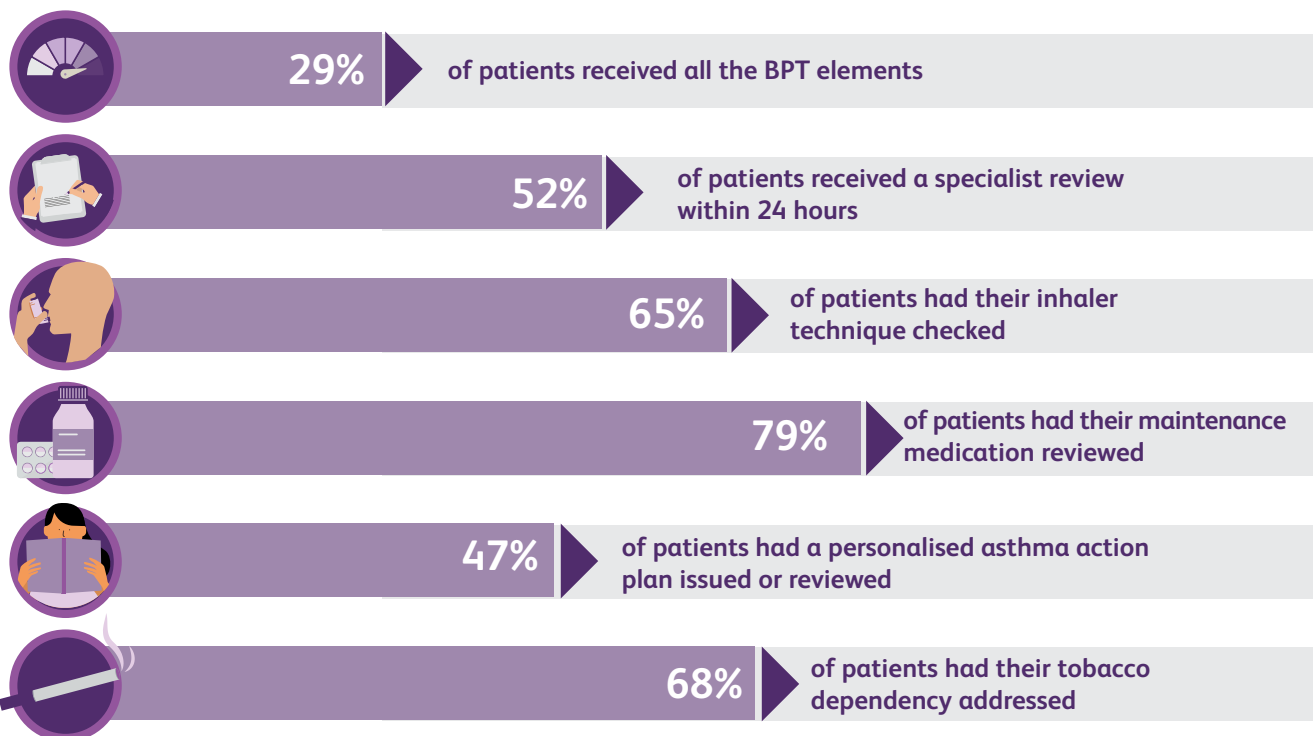
BPT is intended to provide enhanced payments to hospitals in England that provide the highest quality care. Even if the BPT is not introduced as planned, the elements of care outlined here remain important. Scotland and Wales use other ways to ensure that patients receive the best care.

If hospitals can provide treatments specified in the BPT to at least 50% of asthma patients admitted to hospital each month, they will be rewarded with funding that will help to further improve the care of their asthma patients.

Under this plan, patients should receive the following BPT elements:

- > a specialist respiratory review within 24 hours of arrival at hospital and
- > the following elements of good practice asthma care before discharge:
 - inhaler technique checked
 - maintenance medication reviewed
 - personal asthma action plan issues or reviewed
 - tobacco dependency addressed (if the patient is a current smoker).

The elements of care highlighted above represent good practice hence they are included in this report as a set of treatments and interventions that every patient should expect before discharge from hospital.



What should happen before you are discharged from hospital (high-quality planned discharge)

Respiratory specialist review*

Respiratory specialist review
(within 24 hours of arrival
at hospital)



Inhaler technique
checked



Maintenance
medication reviewed



Tobacco dependency
addressed (if you are
a current smoker)



Personal
asthma action
plan reviewed

These elements make up the mandatory part of a proposed adult asthma best practice tariff (BPT) where hospitals will receive a financial incentive for providing this treatment to patients who are admitted to hospital with an asthma attack.

* A respiratory specialist is a healthcare professional who has special expertise in the care of people living with lung conditions such as asthma. They could be a doctor, nurse, pharmacist or physiotherapist.

Useful web pages

To find out more about asthma and how to stay well, we recommend the following online resources:

NACAP children and young people's asthma audit patient report

This report provides information on children and young people aged 1–18 years, admitted to hospital paediatric services with an asthma attack.

www.rcplondon.ac.uk/nacap-paediatric-asthma

Asthma UK and British Lung Foundation (AUK-BLF)

AUK-BLF is the UK's leading lung charity. They work to ensure that people can breathe clean air with healthy lungs. You can find information that they provide about managing asthma on the following web pages:

www.asthma.org.uk/advice/manage-your-asthma

www.blf.org.uk/support-for-you/asthma

The National Health Service (NHS)

The NHS provides information on managing your asthma at the following web page:

www.nhs.uk/conditions/asthma/living-with

For more detail on the results of this audit

including links to guidelines for adult asthma patient care formulated by NICE and the BTS see the full 2019/20 adult asthma clinical report available at:

www.rcplondon.ac.uk/adult-asthma-2019-20

Further information

For further information on the NACAP
and to read our annual reports visit
www.rcplondon.ac.uk/nacap

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