

Sustainable Respiratory Care Audit – information for participating healthcare professionals

We invite you to participate in a national quality improvement project on sustainable respiratory care. This project will bring together healthcare professionals across the UK to audit the prescription and use of inhalers and explore the applicability of questions to patients about their inhaler preferences.

By joining this national project, you will have opportunity to:

- Enhance your knowledge of inhaler prescribing guidelines
- Identify opportunities to improve the quality respiratory care in your healthcare facility
- Be supported to gather baseline data which can be used to inform Sustainable Quality Improvement
- Learn how practice in your area compares to national standards
- Take practical action in to promote sustainable healthcare and progress towards a net-zero NHS
- Collaborate with colleagues from around the country
- Present the results of your audit and the national audit at local, regional and/or national forums
- Contribute to publication of the results.

Background

*“Sustainability can be considered a domain of quality in healthcare, extending the responsibility of health services to patients not just of today but of the future.”*¹ Quality improvement projects can incorporate measurement and action to improve the environmental and social impacts of healthcare, as well as healthcare processes and health outcomes.

Selecting appropriate inhaler devices and improving inhaler technique are examples of interventions which have the potential to reduce the carbon footprint of healthcare, while maintaining quality of care and offering financial savings at the same time. Commonly used inhalers include Metered Dose Inhalers (MDIs), which contain hydrofluoroalkane (HFA), and

¹ "Sustainability in quality improvement: redefining value - NCBI - NIH." <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6502556/>. Accessed 6 Aug. 2021.

Dry Powder Inhalers (DPI) which do not contain HFA. DPIs have a much lower carbon footprint than MDIs; the carbon footprints of MDIs are 10-37 times higher than those of DPIs. Based on 2017 data, researchers have calculated that savings of £8.2 million annually and 58 kilotonnes of carbon dioxide equivalent emissions could be made by replacing one in ten MDIs in England with the cheapest equivalent DPIs.²

While not all patients have sufficient lung function to use a DPI effectively, many patients will receive more effective dosing of inhaled medications using a DPI than using an MDI and prefer not to carry a spacer. MDIs should always be used with a spacer. To improve the control of respiratory conditions and reduce exacerbations, as well as to reduce medicines wastage, it is important to review patients' inhalers and technique and consider switching a patient's inhalers where appropriate.

Aims

This project aims to:

- Audit whether inhaler technique has been checked regularly and effectively in patients who are prescribed inhalers
- Apply questions about patients' attitudes and preferences towards inhalers to operationalise the approach outlined by NICE (Asthma patient decision aid)
- Pilot, improve and validate the 'inhaler audit proforma' tool
- Establish baseline from which to improve the quality and environmental sustainability of respiratory care in the NHS
- Guide strategies to inform patients about inhaler and respiratory disease management options
- Engage and educate healthcare professionals from around the UK on sustainable respiratory care

A secondary benefit will be checking of inhaler prescriptions for all patients involved.

Who is invited to collaborate on this project?

- Healthcare professionals working in any secondary or tertiary NHS organisation are invited to undertake this project in your healthcare facility
- All healthcare professionals working in secondary care are invited to apply, including physician associates, pharmacists, respiratory nurses, physiotherapists and doctors

² "Costs of switching to low global warming potential inhalers. An"
<https://bmjopen.bmj.com/content/9/10/e028763>. Accessed 6 Aug. 2021.

- The minimum requirement for you to take part is to have a team of two people, including one junior member of the team (e.g. junior doctor, ward nurse, physiotherapist or health professional in training) and one senior respiratory clinician (consultant, specialist nurse or specialist registrar). A senior member of the team is essential to provide clinical oversight.
- The steering group will hold an online introductory session for participating teams. One of the team members must attend the introductory session, which will be held on Wednesday 12th January 0830-0900 and repeated on Wednesday 26th January 08:30-0900 (attendance is only required only at one of the two sessions). This meeting will introduce participants to the project aims and project plan and allow participants to raise any questions.
- After the first meeting, you will be asked to submit an application to your local Caldicott guardian to ensure that you have approval to carry out the audit
- Over a two-month period (February and March 2022), teams will be asked to carry out the audit aiming to involve at least 20 patients by interviewing them using the proforma (see end of this document).
- Teams will be provided with an excel form template in which to enter the results. The completed excel spreadsheet must be sent back to the coordinating team for analysis.
- Two feedback seminars will be hosted after data collection and initial analysis has been completed.
- Findings will be compiled and written up for publication in a journal and presentation at relevant local, regional and national forums by participating healthcare professionals.

Required commitment

- There is no funding for this project and you are not required to access any funding locally. Health professional time will be required.
- Participating health professionals will be expected as a minimum to:
 - Undertake 20 questionnaires and upload the questionnaire results into a spreadsheet. Each questionnaire takes about 5 minutes to complete. (2h)
 - Attend two planning meetings (or one planning meeting and provide written feedback in advance of the second meeting) (1.5h), submit a Caldicott application using our guidance (0.5h) and one feedback meeting at the end of the project. (1h)

- The minimum time commitment is estimated to be 5 hours over three months, expected time commitment approximately 6 hours over three months.
- There will be opportunities for further collaboration for any interested participants.

What will you get out of participating?

- All sites who submit data from 20 questionnaires will be acknowledged in any presentation
- We will support all teams to present their data locally and implement improvements and changes in their settings

Risks

- This project will require patient contact, and therefore appropriate PPE may have to be used in line with hospital guidelines. This project is not to be carried out in aerosol generating procedure areas.

Scope

At the moment this project is limited to secondary and tertiary care settings within the NHS. We may repeat the project in primary care at a later date.

Timescale

- Participating organisations will be recruited during August and September 2021
- The two initial meetings will be held on the 16th and 23rd September 2021. These meetings will be run twice from 1-2pm and from 7-8pm on both days.
- The survey should be undertaken between during October and early November 2021.
- Analysis and dissemination of results will take place during December 2021.

Inhaler Audit Pro-forma

**Before starting the questionnaire, check with a nurse or another health professional who knows the patient whether he/she/they considers that the patient has capacity to answer these questions.*

Also, before starting to complete the questionnaire, check with the patient whether they are happy to take part and whether this is a convenient time for them or they would like you to return later.

Date		Location (Ward & Hospital)	
Hospital number	[This will be deleted before sharing results with the central study team]	Confirmed that the patient has capacity *	

What is the patient's condition?

<i>Asthma</i>	<i>COPD</i>	<i>Other? If so, please write below</i>
Y/N	Y/N	Y/N

Prescribed inhalers

1) Can I check which inhalers you are on?

Inhalers that the patient is prescribed in primary care (according to summary care record or patient notes)	Inhalers that the patient is prescribed for this admission (according to inpatient script)	Inhalers at patient's bedside (and number of each type)

>> DPI questions

Inhaler technique (DPI) – hold up relevant inhaler

2) How confident are you with your inhaler technique for this inhaler? (DPI)

Very confident	Confident	Somewhat confident	Not at all confident

- 3) Has a healthcare professional demonstrated good inhaler technique for this inhaler to you before? If so, was that in the last one month, the last one year, or longer ago? (DPI)

Yes, <1 month ago	Yes, 1m-12m ago	Yes, >1 year ago	No, never	Unsure

- 4) Please demonstrate your inhaler technique. (DPI)

	Demonstrated correctly	Not demonstrated correctly
Prepare the inhaler (as per inhaler, e.g. shake inhaler, remove mouth piece)		
Empty lungs		
Positioning (sat up straight, chin inclined up)		
Mouth seal		
Fast, deep inhalation		
Hold breath for 3 seconds		

- 5) ***This question is optional:*** After you complete this review of inhaler technique, you may have the facilities and time available to check whether the patient's inspiratory effort is sufficient to effectively use a DPI. If so, please answer these questions:

- a. Which device was used to check inspiratory effort?

<i>Incheck device</i>	<i>Trainhaler / Placebo inhaler device</i>	<i>Other? Please give name</i>
Y/N	Y/N	Y/N

- b. Was the patient's inspiratory effort sufficient to use a DPI?

Yes	No

Replacement (DPI)

- 6) Do you know when this inhaler needs replacing? (DPI)

Yes	No

If yes, how do you know when it needs replacing? (DPI)

7)

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➔ *If the patient also takes an MDI then complete Q8 to 13. If not, then skip to Q14.*

➔ *If the patient is on a soft mist inhaler (SMI) please also complete the SMI supplementary questions (Appendix, Q18-24) and then return to this part of the proforma.*

>> MDI Questions

Inhaler technique (MDI) – hold up relevant inhaler

8) How confident are you with your inhaler technique for this inhaler? (MDI)

Very confident	Confident	Somewhat confident	Not at all confident

9) Has a healthcare professional demonstrated good inhaler technique for this inhaler to you before? If so, was that in the last one month, the last one year, or longer ago? (MDI)

Yes, <1 month ago	Yes, 1m-12m ago	Yes, >1 year ago	No, never	Unsure

10) Please demonstrate your inhaler technique (MDI)

	Demonstrated correctly	Not demonstrated correctly
Prepare inhaler e.g. remove mouthpiece, attach spacer		
Empty lungs		
Positioning (sat up straight, chin inclined up)		
Mouth seal		
Appropriate inhalation – slow and gentle if no spacer / five tidal breaths with spacer		

11) Are you prescribed this inhaler for more than one dose at a time, e.g. 'two puffs once a day' or 'two puffs twice a day'? (MDI)

If the patient answers yes to this question, please ask them to demonstrate how they take the second dose. An appropriate technique for taking a second dose is to complete the first dose and then repeat the steps above. Some patients may already have demonstrated inappropriate technique, e.g. by spraying two doses into a spacer at once.

Not prescribed two puffs at one time	Prescribed two puffs at one time and demonstrated appropriate technique	Prescribed two puffs at one time and demonstrated inappropriate technique

Replacement (MDI)

12) Do you know when this inhaler needs replacing? (MDI)

Yes	No

If yes, how do you know when it needs replacing? (MDI)

13)

you have to request a new inhaler when yours is nearly empty? (MDI)

Automatically	Request when required	Unsure

>> Questions for all patients

Questions about all inhalers

14) How do you most frequently dispose of your inhalers?

In order not to bias the response, please ask the question above and document which of the following they reply. If the patient has variable approach to disposing of their inhaler, ask them to describe the most common method.

Household waste bin	Recycling bin	Return to pharmacy	Other – please write the patient’s response here in free text

15) Did you know that your used inhalers cannot be recycled in the local council recycling bin?

Yes	No

Inhaler Preference questions (reference NICE asthma decision aid):

16) How important to you is:

a. Being able to use your inhaler correctly and easily

Very important	Important	Somewhat important	Not important

b. Being able to tell how many doses are left in your inhaler

Very important	Important	Somewhat important	Not important

c. Having to clean your spacer frequently

Very important	Important	Somewhat important	Not important	Not applicable

d. Being able to carry your inhaler (and your spacer, if applicable) around with you easily

Very important	Important	Somewhat important	Not important

e. That your inhaler has a low carbon footprint

Very important	Important	Somewhat important	Not important

17) Would you consider changing to a different inhaler that has any of the following features?

Easier to use correctly and easily	Smaller or easier to carry around	Does not require you to use or wash a spacer	Has a lower carbon footprint than your current inhaler	Another reason – please write in free text	I would not change my inhaler by choice
Y / N	Y / N	Y / N	Y / N	Y / N	Y / N

Would you like to say anything more about your answer(s)?

Appendix: Soft Mist Inhaler (SMI)

Inhaler technique (SMI) – hold up relevant inhaler

18) How confident are you with your inhaler technique for this inhaler? (SMI)

Very confident	Confident	Somewhat confident	Not at all confident

19) Has a healthcare professional demonstrated good inhaler technique for this inhaler to you before? If so, was that in the last one month, the last one year, or longer ago? (SMI)

Yes, <1 month ago	Yes, 1m-12m ago	Yes, >1 year ago	No, never	Unsure

20) Please demonstrate your inhaler technique (SMI)

	Demonstrated correctly	Not demonstrated correctly
Prepare inhaler e.g. <ul style="list-style-type: none"> • Keep cap closed • Turn the clear base in direction of arrows on label until it clicks (1/2 turn) • OPEN cap until it snaps fully open 		
Breathe out slowly and fully		
Mouth seal		
Appropriate inhalation: – PRESS dose -release button during one slow and deep breath inhalation		
Hold breath for 10 seconds or for as long as is comfortable		

21) Are you prescribed this inhaler for more than one dose at a time, e.g. 'two puffs once a day'? (SMI)

If the patient answers yes to this question, please ask them to demonstrate how they take the second dose. An appropriate technique for taking a second dose is to complete the first dose and then repeat the steps above. Some patients may already have demonstrated inappropriate technique, e.g. by spraying two doses into a spacer at once.

Not prescribed two puffs at one time	Prescribed two puffs at one time and demonstrated appropriate technique	Prescribed two puffs at one time and demonstrated inappropriate technique

Replacement (SMI)

22) Do you know when this inhaler needs replacing? (SMI)

Yes	No

If yes, how do you know that it needs replacing? (SMI)

23) Do you get a new one of this inhaler automatically on your repeat prescription, or do you have to request a new inhaler when yours is nearly empty? (SMI)

Automatically	Request when required	Unsure

24) (If prescribed SMI) Do you get a whole new inhaler every time? Or do you get a pack of 5 refill cartridges and only a new inhaler every 6 months (minimum)?

Whole new inhaler every time	Refill pack	Unsure