NHS
South West London
Clinical Commissioning Group

The Environmental Impact of Inhalers

The NHS has committed to reducing its carbon footprint by 51% by 2025 to meet the target in the Climate Change Act, including a shift to dry powdered inhalers (DPI) to deliver a reduction of 4%. DPIs and other newer types of inhalers like soft mist inhalers are less harmful to the environment than traditional pressurised metered dose inhalers (pMDIs) and the NHS long term plan supports the use of these inhalers where it is clinically appropriate. NICE has produced an inhaler decision aid to facilitate discussion about inhaler options.

pMDIs use a propellant, which is a greenhouse gas that contributes to global warming. DPIs, which use no propellant, are less harmful to the environment. However, DPIs require people to have an adequate inspiratory flow rate for effective delivery of the medicine. **Treatment with inhalers should only be initiated or changed when it is clinically warranted and with appropriate training**.

Where a new device is prescribed, adherence and inhaler technique should **always** be checked, as well as at every review, to ensure patient control is not affected. ***The most effective device is the one the patient can and does use.***

The Investment and Impact Fund (IIF), which forms part of the PCN DES specification includes two prescribing targets that form the "Help create a more sustainable NHS" and makes a requirement of PCNs to "actively work with their CCG to optimise the quality of prescribing of metered dose inhalers".

The table below provides some suggested actions and considerations that GP practices could use to support this initiative (see the PCN DES for additional information):

1. Ensure appropriate use and disposal of inhalers	• Review patients repeat prescription issues and adherence to therapy. • Encourage patients to reduce waste by not over-ordering their inhalers, looking after them and using the correct inhaler technique. • Ensure patients know how many doses are contained within their inhaler, how to tell when their inhaler is empty and encourage patients to keep track of how many doses they have used if an inhaler doesn't have a dose counter.
Unwanted or used inhalers should be returned to a community pharmacy for recycling or inclusion in the general medicines waste, which undergoes environmentally safe disposal.	

2. Consider low carbon inhalers during Structured Medication Reviews and planned Asthma/COPD Reviews taking place in primary care, where clinically appropriate to do so	Prioritise patients at high risk or with poor control for a respiratory review. • Offer a DPI if a patient is not using a spacer with their pMDI, and they have adequate inspiratory flow. DPIs are not an appropriate choice of inhaler for patients who are not able to generate sufficient inspiratory flow. Some examples of patients who might not be able to generate sufficient inspiratory flow include frail, elderly patients, selected patients with COPD, very young patients and those with muscle weakness (see PrescQIPP Bulletin 295). • Consider maintenance and reliever therapy (MART) if a patient is using a combination inhaler – this could aid compliance. It is important to ensure patients can understand and comply with their MART regimen. • In patients using more than one single component inhaler, consider reviewing and changing to a combination inhaler where one is available and is suitable for the individual. • Identify patients on mixed inhaler devices, e.g. a pMDI and DPI, and review suitability for ongoing prescribing.
Aim to get and maintain good control of asthma and COPD through reviewing patients regularly and treating in line with SWL CCG asthma and COPD guidelines.	

3. Review patients using inhalers with the highest carbon footprint The PCN DES implementation guidance states that feedback suggests that *the majority of asthma patients using MDIs would change their device for environmental reasons so long as the new inhaler was efficacious, easy to use and fitted their current routine, and that they could change back if needed.*	• Have a conversation with patients about changing to a lower carbon footprint equivalent pMDI or DPI (see PrescQIPP patient information materials). • Use the SWL Asthma and COPD guidelines to guide the choice of DPI. The device should be based on patient preference and ability to use it. Patients should be trained and have shown satisfactory technique to ensure their device is used effectively. • Treatments initiated in secondary/tertiary care should not be changed without discussion with the respiratory specialist. • In children, a pMDI and spacer is the preferred method of delivery of Short-Acting Beta$_2$ Agonists (SABA) and Inhaled Corticosteroid (ICS). Alternative devices are only recommended where an individual child's adherence to a pMDI and spacer combination is likely to be so poor that it would undermine effective asthma control.

4. Review Short-Acting Beta$_2$ Agonist Prescribing	• Identify patients overusing SABA and review: - Consider, does a COPD patient need 2 SABAs each month? - Well controlled asthma patients should not need more than 1 or 2 SABAs per year. Additional SABAs for school, alternative homes and work etc. should be prescribed as one-off acute issues. • Initiate new patients on the lower carbon brands of salbutamol - Salamol® or Airomir® pMDI. • Ventolin Evohaler® has a high carbon footprint compared to other pMDIs. In consultation with patients, consider gradually changing Ventolin® pMDI prescriptions to lower carbon alternatives. • Consider changing patients with sufficient inspiratory flow to a Salbutamol DPI *Some patients find it hard to get the dry-powder medicines in their DPI deep enough into their lungs during an asthma attack. For these patients, a SABA pMDI inhaler and spacer should be provided for use in emergency asthma attacks.* See IIF section 5.3 for detailed information on carbon emissions per salbutamol inhaler
Supply constraints – Do not carry out mass changes to SABA low carbon branded inhalers as this may impact on the supply chain.	

5. Focus on Prevention	• Offer all patients self-management education that focuses on individual needs and reinforce with a written personalised asthma action plan (PAAP), based on their symptoms and/or peak flows: *Adults and children over 12 years* and *Children under 12 years* - can be completed electronically saved in patient's notes and sent via an electronic messaging service, such as AccuRx. • Use on-line videos, available via Asthma UK, to support inhaler technique and adherence. • Discuss approaches to minimising indoor air pollution and exposure to outdoor air pollution, as this can trigger and exacerbate asthma. • Ensure COPD and Asthma patients have been given advice on smoking cessation, exercise promotion and referred to pulmonary rehabilitation where appropriate.
If a patient is prescribed a new medicine, they can be referred to their community pharmacist for further support, utilising the New Medicine Service.	

6. Additional Resources Available	• PrescQIPP Bulletin 295: Inhaler Carbon Footprint: this includes a comprehensive briefing document, patient information materials and an inhaler carbon footprint spreadsheet attachment comparing the carbon output of numerous inhalers. • SWL asthma & COPD guidelines.

The recommendations made in this document do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.