

Inhaler carbon footprint

The NHS has committed to reducing the carbon footprint of health and social care in line with the Climate Change Act target of 51% by 2025.¹ Chlorofluorocarbon (CFC) propellants contained in pressurised metered dose inhalers (pMDIs) were recognised as ozone depleting substances and their production was phased out in the UK by 1996. CFCs were replaced by 'CFC-free' inhalers containing hydrofluorocarbons (HFCs).^{2,3} Although HFCs are not ozone depleting substances, they are powerful greenhouse gases which can contribute to global warming.^{2,3} Carbon emissions from inhalers account for approximately 3% of all NHS carbon emissions. The majority of emissions come from the propellant in pMDIs.⁴ pMDIs account for 71.6% of all inhaler device types prescribed in England, 68.8% in Wales and 66.6% in Scotland (NHSBSA Apr-Jun21). Dry powder inhalers (DPIs) and soft mist inhalers (SMIs) have a lower carbon footprint than pMDIs.³ A range of strategies can support a reduction in the inhaler carbon footprint including optimising prescribing, switching to lower carbon footprint alternatives where clinically appropriate, and reducing inhaler waste.



Key recommendations

- Determine how local or practice prescribing data on the inhaler carbon footprint compares to the national or local average and identify where local improvements can be made using the PrescQIPP inhaler carbon footprint data tool and visual data pack.
- Agree, through an appropriate group such as the Area Prescribing Committee, a range of strategies to support the NHS commitment to lower the inhaler carbon footprint.
- Agree medicines optimisation strategies to lower the inhaler carbon footprint which optimise prescribing by:
 - » Getting or maintaining good control of asthma and COPD through reviewing patients regularly and treating in line with NICE asthma and COPD treatment pathways.
 - » Agreeing local respiratory pathways and medicines formulary choices which take into account lower inhaler carbon footprint options.
 - » Demonstrating and checking inhaler technique.
 - » Identifying and reducing short-acting Beta-2 agonist (SABA) overuse.
 - » Changing to combination inhalers where clinically appropriate.
 - » Prescribers discussing, with individual patients, lower carbon footprint inhalers during patient reviews or when a change in treatment is clinically necessary.
- Support prescribers to start new patients on, or switch existing patients to, lower carbon inhaler alternatives. Examples of support include:
 - » Prescriber education on lowering the inhaler carbon footprint.
 - » Providing practice level inhaler carbon footprint prescribing data.
 - » Producing local respiratory prescribing guidelines which include lower carbon footprint inhalers and how to optimise prescribing.
 - » Ensuring lower carbon footprint inhaler options are included in medicines formularies.
 - » Providing examples of locally preferred switches from high to lower carbon footprint inhalers.
 - » Undertaking audits to identify respiratory patients suitable for review to improve clinical outcomes and reduce the inhaler carbon footprint.
 - » Providing patient information resources to explain the change to low carbon footprint inhalers.
 - » Ensuring stock availability of any alternative inhaler switches locally recommended through discussions with pharmacies, suppliers and/or manufacturers
- Reduce the environmental impact of inhaler waste by:
 - » Encouraging patients to return their used or unwanted inhalers to a pharmacy for either recycling where available or environmentally safe disposal.
 - » Encouraging patients to look after their inhalers and not over-order.
 - » Ensuring that patients know how to tell when their inhaler is empty.
 - » Increasing the use of re-usable inhalers.

Prescribing data and savings




Across England, Wales and Scotland 61.1 million inhaler items are prescribed annually with a total carbon footprint of 1,342,923,023 kg CO₂e (NHSBSA Apr-June 21).

The PrescQIPP inhaler carbon footprint data tool and visual data pack allows users to view their local prescribing data and how this compares to the national average. The impact of any inhaler switches being considered in terms of indicative carbon footprint and cost impact can be reviewed. For example:

- Switching 25% of Ventolin pMDIs to Salamol pMDI would produce a 12 months carbon footprint saving of 106,699,451 kg CO₂e and produce a 12 months cost saving of £261,647 across England and Wales. [NHSBSA Jun-Apr 21]
- Switching 25% of Fostair® 100/6 pMDI to Fostair® NEXThaler 100/6 would be cost neutral and produce a 12 months carbon footprint saving of 14,442,353 kg CO₂e across England and Wales. [NHSBSA Jun-Apr 21]

References

1. NHS England. The NHS Long Term Plan. January 2019. <https://www.longtermplan.nhs.uk/wp-content/uploads/2019/08/nhs-long-term-plan-version-1.2.pdf>
2. NHS Executive. Phase out of CFC containing metered dose inhalers for the treatment of asthma and COPD. Health Service Circular (HSC 1998/18). 23 October 1998. https://webarchive.nationalarchives.gov.uk/ukgwa/20120503111041/http://www.dh.gov.uk/en/Publicationsandstatistics/Lettersandcirculars/Healthservicecirculars/DH_4004810
3. NICE. Inhalers for asthma (patient decision aid). Published 23 May 2019. Last updated 01 Sept 2020. <https://www.nice.org.uk/guidance/ng80/resources>
4. NHS England and NHS Improvement. Delivering a 'Net Zero' National Health Service. Published October 2020. <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

Additional resources available	 Bulletin	https://www.prescqipp.info/our-resources/bulletins/bulletin-295-lowering-the-inhaler-carbon-footprint/
	 Tools	
	 Data pack	https://data.prescqipp.info/?pdata.u/#/views/B295_Inhalercarbonfootprint/FrontPage?iid=1

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