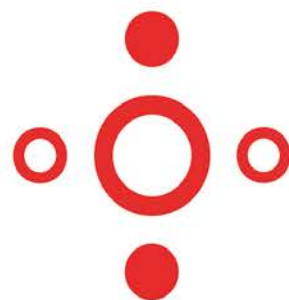


Grŵp Strategaeth Meddyginiaethau Cymru Gyfan  
All Wales Medicines Strategy Group



# Decarbonisation: inhaler prescribing, use and disposal 2023–2030

**A national strategy for Wales**

November 2023

This document has been prepared by the Inhaler Decarbonisation Task and Finish Group, with support from the All Wales Prescribing Advisory Group (AWPAG) and the All Wales Therapeutics and Toxicology Centre (AWTTC), and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG).

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### Summary

In April 2019 the Welsh government declared a climate emergency and committed to achieving a carbon neutral public sector by 2030. The targets set by the Welsh government apply to all public sector bodies including NHS Wales.

The use of inhalers to treat asthma and chronic obstructive pulmonary disease (COPD) contributes to the overall carbon footprint of NHS Wales. In the month of November 2022, a total of 357,024 respiratory inhaler items with an indicative carbon footprint of 4,784 tonnes of CO<sub>2</sub>e were prescribed in primary care in Wales. The NHS can reduce its carbon footprint and contribute towards achieving collective net zero by 2030 by changing the ways that respiratory conditions are diagnosed, and the ways that inhalers are prescribed, used and disposed of. There is work and activity already under way across Wales to tackle the carbon footprint of prescribed inhalers, but there is a need to do more and to accelerate activity if NHS Wales is to meet the net zero targets.

The [NHS Wales decarbonisation strategic delivery plan \(2021\)](#) sets out the commitments to reduce carbon emissions attributed to NHS Wales through a number of key initiatives. Of these, three initiatives relate directly to the use and disposal of inhalers. The intention is to “take a patient-centric approach to optimise inhaler use, focusing on reducing over-reliance on reliever inhalers where possible and emphasising the importance of inhaler-specific disposal and recycling”. This includes ensuring the correct diagnosis and prescribing of inhalers, patients’ inhaler technique and adherence to treatment, medication reviews and the correct disposal of inhalers. Prescribers are expected to have due regard for this strategy and its objectives. However, this information is not intended to remove the clinical discretion of the prescriber in accordance with their professional duties.

This strategy sets out the ambitious actions that the NHS and its partners will need to take to reduce the carbon impact of inhalers in Wales.

### Our commitments

To reduce the carbon impact of inhaler use in Wales, we will:

- **Collaborate** with a range of stakeholders including patients and the public, policy makers, the pharmaceutical industry and healthcare professionals.
- Take a **holistic patient-centred approach** to ‘greener’ respiratory care, that achieves environmental priorities and improved clinical outcomes, from diagnosis through to inhaler disposal.
- Design interventions and test pilot services based on best **evidence** or **information** available and informed by **behavioural insights** and **data**.
- Ensure appropriate **data on inhaler prescribing** in Wales are accessible to all stakeholders to inform activity and monitor progress against the decarbonisation initiatives in the [NHS Wales decarbonisation strategic delivery plan](#).
- Provide guidance and educational resources to encourage **carbon literacy** across all stakeholders.

### Top 12 actions to deliver the strategy

1. Establish a Task and Finish Group to co-ordinate and oversee activity relating to inhaler prescribing, use and disposal.
2. Work in partnership with all stakeholders across three broad areas: i) prescribing of inhalers; ii) use of inhalers; and iii) responsible disposal of inhalers.
3. Engage with national and local environmental and clinical networks (such as [Respiratory Health Implementation Group](#), [Green Health Wales](#), [Greener Practice](#), and local 'green' groups) to support progress towards decarbonisation.
4. Ensure interventions, guidance and services are designed and developed using best available evidence and data including behavioural science.
5. Ensure Welsh national guidance encourages patient-centred, correct diagnosis and regular reviews of asthma and COPD by clinically appropriate staff, to promote quality respiratory care with low carbon outcomes.
6. Develop advice on repeat prescription ordering for inhalers which prompts for a chronic respiratory disease review and supports the inhaler decarbonisation strategy to reduce prescriptions for unnecessary reliever inhalers.
7. Ensure that healthcare professionals are appropriately informed, trained and carbon literate to assess a person's inhaler technique and offer more environmentally friendly products first line. The training should emphasise the importance of making sure that a patient can demonstrate good inhaler technique.
8. Use prescribing decision support software, where available, to signpost prescribers to consider an inhaler with a lower carbon footprint as first choice.
9. Use drivers such as National Prescribing Indicators and primary care contracts to encourage more environmentally sustainable prescribing, use and disposal of inhalers.
10. Publicly report and monitor data on the progress in reducing the carbon footprint of inhalers used in primary care in Wales, and highlight prescribing practice that is not in line with national asthma and COPD guidelines.
11. Support and evaluate a pilot to recycle inhalers being conducted in Swansea Bay University Health Board. Pending evaluation outcomes, NHS Wales and its partners will work together to develop and implement the necessary steps to scale and spread this initiative.
12. As well as sharing knowledge, research and best practice across Wales, we will work with governments of the other UK nations, as well as NHS colleagues across the UK, to maximise the impact our work can have on the global carbon footprint.

### Purpose

1. This document sets out a strategy for reducing the carbon impact of inhaler use in NHS Wales, outlining key areas of action the NHS and its partners in Wales will need to take to deliver against the three inhaler initiatives of the [NHS Wales decarbonisation strategic delivery plan](#):
  - reducing over-reliance on reliever inhalers;
  - reducing the use of inhalers that have a high global warming potential (GWP) by prescribing lower GWP inhalers as an alternative where appropriate; and
  - responsible disposal of inhalers.
2. Collaboration is one of the five ways of working for sustainable development mentioned in Welsh Government's [Well-being of Future Generations \(Wales\) Act 2015](#). Co-production is also one of the four guiding principles of [Prudent Healthcare](#) in Wales. Collaboration and co-production are key to the delivery of this strategy.

### Context

#### Policy context of decarbonisation in the NHS

3. The Welsh government's plan for decarbonisation<sup>1</sup> in Wales is set out in [Prosperity for all: a low carbon Wales](#). The aim is for the public sector in Wales to be carbon neutral<sup>2</sup> by 2030.
4. The NHS Wales decarbonisation targets are to reduce carbon emissions by 16% by 2025, and by 34% by 2030. NHS organisations have a duty to develop decarbonisation action plans.
5. In March 2021, the [NHS Wales decarbonisation strategic delivery plan](#) was published in response to the climate emergency in Wales. The plan sets out a series of steps for decarbonisation of the NHS in Wales to reach the target of public sector collective net zero carbon emissions by 2030. The report has 46 initiatives and targets; all are ambitious, and all will need a drastic change in approaches to healthcare to be realised. Three initiatives are directly related to inhaler prescribing, use and disposal.
6. The Wellbeing of Future Generations (Wales) Act (2015) places a duty on the NHS to consider sustainability throughout its work. Therefore, it provides a purposeful driver for the NHS to make real changes in the carbon emissions associated with its services. The use of inhalers has been well documented as contributing to global warming through the use of certain gases. For most patients, using low global warming potential (GWP) inhalers will not adversely affect control of their respiratory

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<sup>1</sup> Decarbonisation means reducing and compensating for emissions of carbon dioxide and other greenhouse gases.

<sup>2</sup> 'Carbon neutral' means that the amount of greenhouse gases emitted by the public sector will be balanced by measures that remove an equivalent amount of those gases – giving a net carbon impact of zero.

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disease and, by decreasing the contribution to global warming, will benefit the health of current and future generations.

### Scale of the problem

7. Around 300,000 patients with asthma and 80,000 patients with COPD rely on inhaler treatments in Wales.
8. Each month around 350,000 inhaler items<sup>3</sup> are dispensed on NHS prescription forms to patients registered with GP practices in Wales. This equates to an approximate spend of £6 million on inhaler items.
9. Data for November 2022 showed that just under 68% of inhalers prescribed in Wales were metered dose inhalers (MDIs). MDIs contain hydrofluorocarbons (greenhouse gases) in the propellants which, when released into the atmosphere, cause more global warming. Dry powder inhalers (DPIs) and soft mist inhalers (SMIs) have a lower global warming impact.
10. DPIs and SMIs are as effective as MDIs, and for most patients could be prescribed instead, where clinically appropriate.

### Prescribing trends

11. Data on inhaler prescribing in Wales is published monthly by the All Wales Therapeutics and Toxicology Centre (AWTTC): [Measuring the carbon footprint of inhaler use within primary care in Wales.](#)
12. Across primary care in Wales, during 2022–2023, over 4.25 million inhaler items were dispensed at a cost of over £74m.
13. There is a general downward trend in the prescribing of MDIs in preference to DPIs or SMIs in Wales. However, this shift in prescribing is small and progress is slow. Data for November 2022 compared to November 2021 showed a decrease of 4.18% in number of MDIs as a percentage of all inhalers prescribed. This lowered the MDI percentage of all inhalers to 67.7% in November 2022, compared to 70.6% in November 2021.

### How we will drive change

14. **Collaboration and partnership working** with a range of stakeholders including patients and the public will continue. Within Wales there are already numerous stakeholders working collaboratively in this area.
  - The All Wales Medicines Strategy Group (AWMSG) and AWTTC have established strong working relationships with the Association of the British Pharmaceutical Industry (ABPI), Public Health Wales (PHW) and the Respiratory

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<sup>3</sup> One prescription item may be for more than one inhaler unit.



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Health Implementation Group (RHIG). These collaborations were highlighted at the June 2022 Best Practice Day, hosted by AWTTTC, which brought together a wide spectrum of stakeholders to discuss the environmental impact of medicines. Recordings from the day are available here: [Best Practice Day July 2022 – Environmental impact of medicines - All Wales Therapeutics and Toxicology Centre \(nhs.wales\)](#).

- Engaging with networks such as [Green Health Wales](#) to support our progress towards the decarbonisation agenda will be essential. Employers will be encouraged to support opportunities for staff to engage in networks, local green groups and events that raise the profile of the decarbonisation agenda.
  - The RHIG has developed apps and educational resources for patients and healthcare professionals. AWMSG has previously worked collaboratively with the RHIG to develop national guidelines for [managing COPD](#) and [managing asthma](#) in Wales. AWMSG and AWTTTC will continue to work together with the RHIG to achieve the actions set out in the inhaler action plan for NHS Wales, and align patients and healthcare professionals with any changes in prescribing policy.
  - Collaboration between organisations in Wales, with specific expertise, will be required. For example, with Public Health Wales, to understand the evidence base and behavioural insights to inform appropriate patient-facing interventions especially around recycling of inhalers. Work with patient organisations, such as Asthma + Lung UK, to understand the patient perspectives and behaviours, and to develop patient-facing communications as needed. Work with the community pharmacy network to maximise the use of their expertise in all aspects of medicines management.
  - The pharmaceutical industry has an important role in supporting the aims of this strategy. Prioritising the development of new low carbon footprint propellants for use in MDIs, supporting the provision of a national one-stop medicines recycling scheme, and, ensuring the inhaler devices and packaging are the most environmentally friendly they can be.
15. A **Task and Finish Group** will be established to co-ordinate and oversee activity relating to inhaler prescribing, use and disposal.
16. A **delivery plan** will be developed setting out action needed to meet the ambition of a net zero NHS by 2030.
17. **Best practice, evidence, guidance** and **data** will be identified, shared and promoted through a range of mechanisms.
- Clinical guidelines will be developed, kept updated and promoted ([All Wales adult asthma management and prescribing guideline](#), [All Wales COPD management](#)

[and prescribing guideline](#) and [All Wales paediatric asthma management and prescribing guideline](#)).

- Ensure Welsh national guidance encourages patient-centred, correct diagnosis and regular reviews of asthma and COPD by clinically appropriate staff, to promote quality respiratory care with low carbon outcomes.
- Advice on repeat prescription ordering for inhalers which prompts for a chronic respiratory disease review and supports the inhaler decarbonisation strategy to reduce prescriptions for unnecessary reliever inhalers to be developed.
- National prescribing indicators to be reviewed regularly and considered as a means of monitoring and influencing change.
- Data on the progress in reducing the carbon footprint of inhalers used in primary care in Wales will be made more accessible.

18. **Collaboration, co-production and joint decision making** will be at the heart of any interventions or services promoted to effect change. This will involve engagement with national and local networks (such as the Respiratory Health Implementation Group, Green Health Wales, Greener Practice and local 'green' groups), the pharmaceutical industry, community pharmacy network, and patient organisations to support progress towards the decarbonisation agenda.

19. Work with NHS Wales Shared Services Partnership and all Wales procurement teams to build upon existing processes in guiding inhaler choices of hospital formularies and consider other **procurement**-related opportunities.

20. **Decision support software** will be promoted to enable key messages to be highlighted to prescribers at the point of prescribing. These messages will give a consistent approach across all health boards to make sure the aims of this strategy can be met. AWTTTC is already collaborating with providers of decision support software for prescribers in Wales.

21. Ensure interventions, guidance and services are designed and developed using best available **evidence** and **data** including **behavioural science**. Provide support for evaluation of pilot projects and build interventions and services using an evidence-based approach and based on behavioural science and insight.

22. A suite of **information resources, clinical training and carbon literacy training** will be accessible for healthcare professionals to ensure they are appropriately informed to advise the patient of inhaler type and assess a person's inhaler technique and offer more environmentally friendly products first line.

23. Opportunities through **primary care contract** negotiations will be identified to include inhaler prescribing, use and disposal activity. There will be a focus on: i) reducing volumes of prescribing of inhalers with high GWP in favour of those with a lower GWP; and ii) reducing over-reliance on short-acting beta agonists as part of the national Quality Assurance and Improvement Framework (QAIF) criteria. This should lead to improvements in the control of respiratory disease.

24. Develop accessible systems to **publicly report and monitor data** on the progress in reducing the carbon footprint of inhalers used in primary care in Wales, and highlight prescribing practice that is not in line with national asthma and COPD guidelines. Currently, AWTTTC publish monthly reports on the carbon footprint of inhalers issued in primary care in Wales. The latest reports are accessible here: [NHS Wales inhaler carbon footprint reports](#).
25. As well as sharing knowledge, research and best practice across Wales, we will work with governments of the other UK nations, as well as NHS colleagues across the UK, to maximise the impact our work can have on the global carbon footprint. Representatives from the NHS in England and in Scotland will join the Inhaler Task and Finish Group.

### Quick wins

26. Actions that can start making a significant difference to the overall carbon footprint of inhalers in Wales.
- Prescribing decisions should, where possible, align with the recommendations made within the current guidelines endorsed by AWMSG for [COPD](#) and for asthma [in adults](#) and [in children](#).
  - Where a shared decision has been made for patients to be prescribed a certain type of inhaler medication, healthcare professionals in Wales should consider using the inhaler with the lowest global warming potential. The carbon footprint of the various options within each therapeutic group can be found through the AWTTTC [Inhaler Decarbonisation dashboard](#).
  - Ensuring inhalers are prescribed by their brand name will support supply of the lowest GWP device as well as future proofing against any unintentional reversals.
  - Rationalise the strength of inhaler prescribed so the lowest dose is administered. For example, where clinically appropriate, changing a beclomethasone inhaler used as 2 doses twice a day to a 'double-strength' version to be used as 1 dose twice a day.
  - Following prudent healthcare principles of shared decision making, agree with patients through a focussed respiratory review to switch from an MDI to a DPI where clinically appropriate.
  - Rationalising inhaler devices to ensure that patients are not prescribed multiple inhalers that are a mixture of MDI and DPI, i.e. wherever clinically appropriate, ensure patients are solely using DPIs.
  - Wherever clinically appropriate, combination inhalers should be used in place of two separate inhalers.
  - Supporting patients and the wider healthcare team in ensuring only the inhalers that are needed by patients are supplied to them.