NHS
Kernow
Clinical Commissioning Group

## About this guide

The Impact and Investment Fund (IIF) for 2021/22 and 2022/23 includes two targets relating to the prescribing of more environmentally friendly or "greener" inhalers:

- ES-01: Metered Dose Inhaler (MDI) prescriptions as a percentage of all non-salbutamol inhaler prescriptions issued to patients aged 12 years or over. Aim to reduce to 25% by 2023/24

- ES-02: Mean carbon emissions per salbutamol inhaler prescribed (kg CO2e). Aim to reduce to 13.4kg by 2023/24

This guide is intended to support practices and PCNs in working towards this target by providing a quick reference source of alternative devices to consider when discussing a change of device type with a patient.

It is envisaged that most switches will be undertaken opportunistically, for example at the patient's annual review or during a structured medication review (SMR). This guide may also be used where a practice or PCN wishes to review a particular cohort of patients such as those already receiving both a pMDI and a DPI, or patients issued with more than 6 SABA inhalers per year (both of which can be identified through Eclipse).

This guide should be used in conjunction with our current adult asthma and COPD prescribing guidelines, as well as the larger inhaler choices document.

## The switch tables

The most clinically effective, cost effective and environmentally friendly inhaler is the one that the patient can and will actually use. The way in which different DPIs are primed and used varies, and no one device will be suitable for all patients. Further information on the relative ease of use of different DPIs can be found in the From Puff to Powder webinar. For this reason, several alternatives are presented where possible. Devices with a lower required inspiratory flow rate (IFR) are marked "LF" (low flow) in line with our other formulary documents.

The tables provide alternatives for 40 of the 50 pMDI devices prescribed in Cornwall according to the Open Prescribing measure. The remaining inhalers have no direct alternative (such as Atrovent), are unlikely to be used by adults (Seretide 50) or are prescribed in very low numbers (Flixotide 250).

Switches are broken down by the degree of complexity: a straight swap, the same active ingredient(s) but a different regimen, and those where the active ingredient(s) and possibly the regimen will be changed. Straight swaps may be more acceptable

to some patients, whereas others may benefit from a more complex switch that results in a simper regimen.

Whilst the focus of this guide is on reducing carbon footprint to meet IIF targets, it should not be forgotten that DPI devices offer benefits to the patient. They are easier to use correctly, resulting in greater deposition in the lungs and so an increased therapeutic effect and the opportunity to reduce SABA usage. All DPI devices include a dose counter to remind the patient to order a new inhaler when the current one is nearly empty.

The choice of which device a patient is switched to should be the result of a shared decision between the patient and clinician. Whilst every consultation will be different, possible levers for change include:

- The patient has approached the practice requesting a greener device
- The patient is having difficulty with pMDI technique
- The patient's condition is poorly controlled and requires a change in therapy
- The patient has a complex regimen and would benefit from it being simplified

Salamol pMDI is included as a direct switch SABA option with a footprint lower than the IIF target for patients uncomfortable with using a DPI reliever.

## The carbon footprint tables

The lifetime carbon footprint of each device is taken from PrescQIPP data. Some manufacturers are offsetting the carbon footprint of some of their DPIs so that the device can be certified as carbon neutral (for example Trelegy Ellipta). These devices are not shown as zero in the charts and tables.

Whilst the carbon figure shows the scale of the benefit of switching to DPIs, they can be hard to put into context. Using the number of miles travelled in a car to illustrate the footprint is something that most patients will be able to relate to. A great many factors affect fuel economy and carbon emissions, and there is no nationally accepted figure. A value of 240g per mile from RAC data was used to calculate the equivalency in this guide. The equivalent miles for a given device may vary slightly between this guide and other sources, however the figures are internally consistent.

A numerical table is included to allow clinicians to localise the discussion with the patient; "47 miles is here to x, 3.7 miles is here to y…"

All pMDIs have a carbon footprint of over 11,000g and in many cases much more, and all DPIs (except Pulmicort Turbohaler and Fixkoh Airmaster) have a footprint of under 1,000g. Any switch undertaken has the potential to offer at least 90% reduction and, in some cases, up to 98%. The small difference in footprint between DPIs is insignificant compared to the reduction when moving from a pMDI, and the most suitable DPI for the patient is the one that should be prescribed.

Some publications use colour codes or icons to illustrate the environmental impact of devices. Using the PrescQIPP colour-coded symbols, all pMDIs would be red and all DPIs would be green. All DPIs would have the "green leaf" symbol in MIMS.

# From Puff to Powder – Greener Inhalers for Adults

Videos demonstrating the correct technique for all these devices can be found on the RightBreathe website. Further information can be found in the From Puff to Powder webinar

## Low flow (LF) options

Devices marked LF have a lower required IFR and may be suitable where there are concerns about the patient's ability to use other DPIs. An In-Check DIAL device may be useful for assessing IFR.

## Direct Switches

These devices may be directly interchanged including dose regimen.

| Original Inhaler | Green Alternative |
|---|---|
| Fostair 100/6 pMDI | Fostair 100/6 NEXThaler |
| Fostair 200/6 pMDI | Fostair 200/6 NEXThaler |
| Trimbow pMDI | Trimbow NEXThaler (COPD only) |
| Beclometasone 200mcg | Easyhaler beclometasone 200mcg |
| Beclometasone extrafine 100mcg (Qvar, Kelhale) | |
| Symbicort 200/6 pMDI | Fobumix Easyhaler 160/4.5*<br>DuoResp Spiromax 160/4.5* |
| Ventolin Evohaler | Easyhaler salbutamol 100mcg<br>Salamol pMDI |

## Switches requiring minor changes

These devices contain the same active ingredient(s) but will require adjustment to the dose regimen. Any reduction in the number of doses per day will make it easier for the patient to take their inhaler as directed and further reduce the carbon footprint.

| Original Inhaler (TWO puff dose) | Green Alternative (ONE puff dose) |
|---|---|
| Beclometasone 100mcg | Easyhaler beclometasone 200mcg |
| Beclometasone extra fine 50mcg dose (Qvar, Kelhale) | |
| Salmeterol & fluticasone 125/25 | Fixkoh Airmaster 50/250<br>Seretide 250 Accuhaler |
| Salmeterol & fluticasone 250/25 | Fixkoh Airmaster 50/500<br>Seretide 500 Accuhaler |
| Symbicort 200/6 pMDI | Fobumix Easyhaler 320/9*<br>DuoResp Spiromax 320/9* |
| Ventolin Evohaler | Easyhaler salbutamol 200mcg<br>Ventolin Accuhaler (LF) |

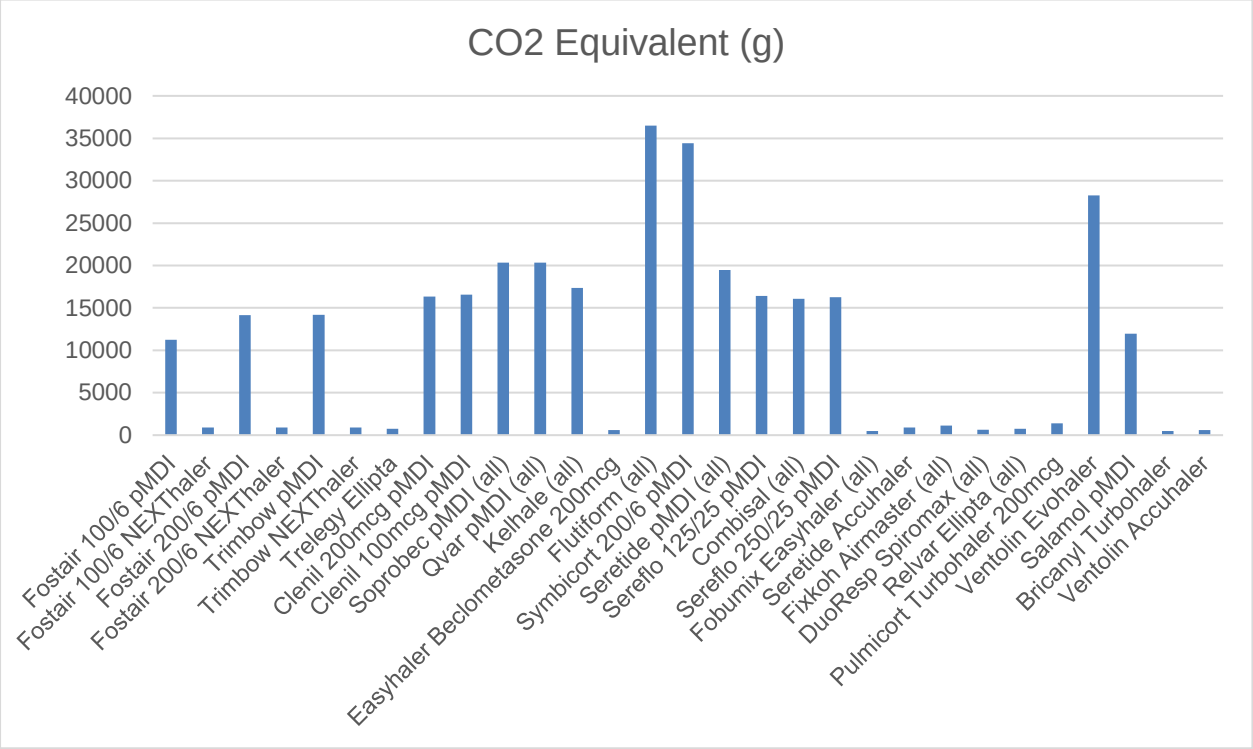
## Switches changing active ingredient

These devices contain different active ingredients and may also require a change to the dose regimen.

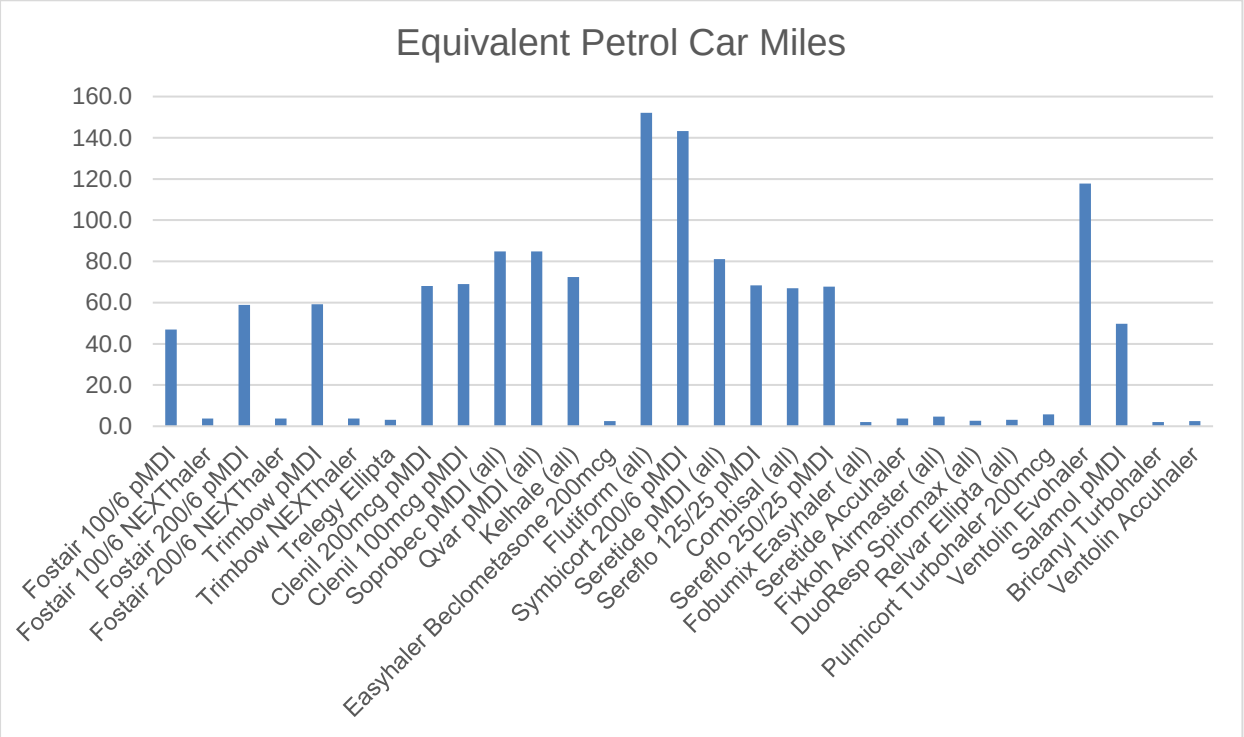
| Original Inhaler (TWO puffs unless otherwise stated) | Green Alternative |
|---|---|
| Trimbow pMDI | Trelegy Ellipta<br>@ 1 puff once daily |
| Fostair 100/6 pMDI<br>@ 1 puff dose | Fobumix Easyhaler<br>160/4.5*<br>@ 1 puff dose<br><br>Fostair NEXThaler 100/6<br>@1 puff dose<br><br>Relvar Ellipta 92/22 (LF)<br>@ 1 puff once daily |
| Salmeterol & fluticasone 50/25 | |
| Flutiform 50/5 | |
| Fostair 100/6 pMDI | Fobumix Easyhaler 320/9*<br>@ 1 puff dose<br><br>Fostair Nexthaler 100/6<br>@ 2 puff dose<br><br>Relvar Ellipta 92/22(LF)<br>@ 1 puff once daily<br><br>DuoResp Spiromax 320/9*<br>@ 1 puff dose |
| Salmeterol & fluticasone 125/25 | |
| Flutiform 125/5 | |
| Salmeterol & fluticasone 250/25 | Fobumix Easyhaler 320/9 *<br>@ 2 puff dose<br><br>Fostair NEXThaler 200/6<br>@ 2 puff dose<br><br>DuoResp Spiromax 320/9*<br>@ 2 puff dose |
| Flutiform 250/10 | |
| Fostair 200/6 pMDI | |
| Beclometasone 100mcg @ 2 puffs or 200mcg @ 1 puff dose | Pulmicort Turbohaler 200mcg (LF)<br>@ 1 puff dose |
| Beclometasone extra fine 50mcg @ 2 puffs or 100mcg @ 1 puff dose (Qvar, Kelhale) | |
| Ventolin Evohaler | Bricanyl Turbohaler 500mcg<br>@ 1 puff dose |
| Salamol pMDI | |

## Environmental impact charts

Indicative lifetime carbon equivalent per inhaler as per PrescQIPP data




Carbon equivalent expressed as the number of miles driven in the average new petrol car in 2020 according to RAC environmental data



## Environmental impact data

| Device | CO2 Equivalent (g) | Petrol Car Miles |
|---|---|---|
| Bricanyl Turbohaler | 492 | 2.1 |
| Clenil 100mcg pMDI | 16552 | 69.0 |
| Clenil 200mcg pMDI | 16322 | 68.0 |
| Combisal (all) | 16087 | 67.0 |
| DuoResp Spiromax (all) | 630 | 2.6 |
| Easyhaler Beclometasone 200mcg | 610 | 2.5 |
| Fixkoh Airmaster (all) | 1125 | 4.7 |
| Flutiform (all) | 36500 | 152.1 |
| Fobumix Easyhaler (all) | 484 | 2.0 |
| Fostair 100/6 NEXThaler | 889 | 3.7 |
| Fostair 100/6 pMDI | 11248 | 46.9 |
| Fostair 200/6 NEXThaler | 890 | 3.7 |
| Fostair 200/6 pMDI | 14152 | 59.0 |
| Kelhale (all) | 17368 | 72.4 |
| Pulmicort Turbohaler 200mcg | 1400 | 5.8 |
| Qvar pMDI (all) | 20350 | 84.8 |
| Relvar Ellipta (all) | 754 | 3.1 |
| Salamol pMDI | 11950 | 49.8 |
| Sereflo 125/25 pMDI | 16420 | 68.4 |
| Sereflo 250/25 pMDI | 16270 | 67.8 |
| Seretide Accuhaler | 898 | 3.7 |
| Seretide pMDI (all) | 19485 | 81.2 |
| Soprobec pMDI (all) | 20350 | 84.8 |
| Symbicort 200/6 pMDI | 34400 | 143.3 |
| Trelegy Ellipta | 765 | 3.2 |
| Trimbow NEXThaler | 890 | 3.7 |
| Trimbow pMDI | 14203 | 59.2 |
| Ventolin Accuhaler | 583 | 2.4 |
| Ventolin Evohaler | 28262 | 117.8 |

Using the PrescQIPP colour-coded symbols, all pMDIs above would be red and all DPIs would be green. All DPIs would have the “green leaf” symbol in MIMS.

## References

*Symbicort 200/6, DuoResp Spiromax 160/4.5 and Fobumix 160/4.5 are the same strength. Symbicort 200/6 refers to the metered dose whereas DuoResp and Fobumix 160/4.5 refers to the delivered dose. European licensing requirements now require inhaler devices to be named by their delivered dose rather than the metered dose. Similarly, Symbicort 400/12 is equivalent to DuoResp or Fobumix 320/9.

Impact and Investment Fund (IIF) 2021/22 and 2022/23, Annex B

PrescQIPP guide to inhaler carbon footprints

Greener Practice – Guide to Greener Inhaler Prescribing

Green inhaler website

RAC Environmental FAQs – average new petrol car in 2020 emits 149g of $CO_2$ per km, equivalent to 240g per mile.

SIGN categorisation of ICS in adults (2019)

Cornwall Joint Formulary – Adult asthma prescribing guidelines

Cornwall Joint Formulary – COPD inhaler prescribing guidelines

Asthma UK – What to do when your medicine changes

## Approval information and version control

Approved by medicines optimisation program board (MOPB) 26 May 2022, review by 26 May 2025

| Version number | Date | Written or updated by | Details |
|---|---|---|---|
| 1.0 | 26 May 2022 | Chris Burgin, pharmaceutical advisor, KCCG<br>Jill Leyshon, respiratory specialist nurse, RCHT | First approved version |
| 1.1 | 7 June 2022 | Chris Burgin | Clarified Trimbow NEXThaler licensed for COPD only.<br>Minor layout amendments. |
| 1.2 | 27 June 2022 | Chris Burgin | Correction of typographical error |