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Assessment of Inhaled Corticosteroids

Chlorofluorocarbons (CFCs) inhaler propellants contained in pMDIs (pressurised Metered Dose Inhaler) were recognised as ozone depleting substances and were phased out in the UK by 1996. CFCs were replaced by 'CFC-free' inhalers containing hydrofluorocarbons (HFCs). Although HFCs are not ozone depleting substances, they are powerful greenhouse gases which can contribute to global warming. Carbon emissions from inhalers have been assessed as being responsible for approximately 3% of all NHS carbon emissions.

The NICE patient decision aid gives an indicative range for DPI (Dry Powder Inhalers) and pMDIs:

- **DPIs (1 dose (two puffs)):** 20 g CO₂e per dose
- **pMDIs (two puffs):** 500 g CO₂e per dose

This is, unfortunately, not the full story, as some pMDIs have a higher indicative carbon footprint when compared with other pMDIs.

There is an incentive, via the PCNs, to move over to more environmentally sustainable inhalers via the Investment and Impact Fund (IIF) 2022/23 Environmental Sustainability Indicator which looks at 2 measures:

ES-01: Metered Dose Inhaler (MDI) prescriptions as a percentage of all non-salbutamol inhaler prescriptions issued to patients aged 12 years or over.

ES-02: Mean carbon emissions per salbutamol inhaler prescribed (kg CO₂e) – which was covered in the [March 2023 Dispex Gazette](#)

ES-01: Inhaled Corticosteroids

The choices available to swap MDIs to DPIs are limited with Inhaled Corticosteroids and the price differential may deter some practices from changing to greener inhalers. In addition, changing steroid inhalers is complicated by the fact that not all brands will deliver the same dose of steroid per actuation. This is particularly true for Qvar. Caution must be taken when changing to and from Qvar inhalers. Note that the Auto-halers and Easi-breathe inhalers are pressurised inhalers having a very similar impact on CO₂ levels to the other MDIs. It is also important to look at the number of doses per inhaler as this may have an impact on the overall cost for a month's supply.

Dispex has assessed the impact on profitability of all these possible changes and this information can be accessed via the [Brand Comparisons](#) section of the Dispex website which is a Members' only resource.

Product	Generic name	Doses	Basic price per inhaler		Indicative carbon footprint per 28days (gCO2e)
Beclometasone MDIs					
Clenil 50	Beclometasone	200	£3.70	pMDI	9,268
Clenil 100	Beclometasone	200	£7.42	pMDI	9,269
Clenil 200	Beclometasone	200	£16.17	pMDI	4,570
Clenil 250	Beclometasone	200	£16.29	pMDI	9,012
Kelhale 50	Beclometasone	200	£5.20	pMDI	4,863
Kelhale 100	Beclometasone	200	£5.20	pMDI	4,863
Qvar 50 MDI	Beclometasone	200	£7.87	pMDI	5,698
Qvar 100 MDI	Beclometasone	200	£17.21	pMDI	5,698
Qvar Autohaler 50	Beclometasone	200	£7.87	pMDI	5,698
Qvar Autohaler 100	Beclometasone	200	£17.21	pMDI	5,698
Qvar Easi-Breathe 50	Beclometasone	200	£7.74	pMDI	5,698
Qvar Easi-Breathe 100	Beclometasone	200	£16.95	pMDI	5,698
Soprobe 50	Beclometasone	200	£2.78	pMDI	7,879
Soprobe 100	Beclometasone	200	£5.57	pMDI	7,871
Soprobe 200	Beclometasone	200	£12.13	pMDI	3,882
Soprobe 250	Beclometasone	200	£12.22	pMDI	7,663
Fluticasone MDIs					
Flixotide 50 Evohaler	Fluticasone	120	£6.53	pMDI	17,696
Flixotide 125 Evohaler	Fluticasone	120	£21.26	pMDI	17,696
Flixotide 250 Evohaler	Fluticasone	120	£36.14	pMDI	17,696
ICS DPI					
Budelin Novolizer device and cartridge 200	Budesonide	100	£14.86	DPI	1,050
Budelin Novolizer Refill 200	Budesonide	100	£9.59	DPI	1,050
Easyhaler Beclometasone 200	Beclometasone	200	£14.93	DPI	171
Easyhaler Budesonide 100	Budesonide	200	£8.86	DPI	182
Easyhaler Budesonide 200	Budesonide	200	£17.71	DPI	182
Easyhaler Budesonide 400	Budesonide	200	£17.71	DPI	182
Flixotide 100 Accuhaler	Fluticasone	60	£4.02	DPI	784
Flixotide 250 Accuhaler	Fluticasone	60	£4.23	DPI	784
Flixotide 50 Accuhaler	Fluticasone	60	£4.00	DPI	784
Flixotide 500 Accuhaler	Fluticasone	60	£4.73	DPI	784
Pulmicort Turbo 100	Budesonide	200	£14.25	DPI	392
Pulmicort Turbo 200	Budesonide	200	£14.25	DPI	392
Pulmicort Turbo 400	Budesonide	50	£14.25	DPI	392

Over the next few editions of the Gazette, Dispex will be looking at Long-Acting Anti-Muscarinic inhalers, the Combination Inhalers, as well as comparing Holding Chamber devices, as many patients will not be able to convert to a Dry Powder Inhaler.

We will be assessing the potential impact some of these might have on dispensary viability, alongside the importance of the drive to ensure environmental sustainability. We will be offering choices for dispensing practices and member practices can access the profitability impact of those choices.

Greener Practice, a Primary Care Group, has a wealth of resources to assist you in making changes to more environmentally friendly inhalers as well as other resources which can help you make your dispensary a beacon of sustainability. They welcome all members of primary care teams: www.greenerpractice.co.uk