**06-Feb-23    Practical Tips on Reducing the Carbon Footprint of Inhaler Prescribing**  
Sent on behalf of Vasu Siva, GP Partner & Clinical Lead for Green Agenda

Dear Colleagues,  
  
This week, the focus is on how we could reduce the carbon footprint of our inhaler prescribing while ensuring high-quality person-centred asthma care.  
   
[Inhalers contribute to 3-4% of the entire NHS carbon footprint](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.greenerpractice.co.uk%252Finformation-and-resources%252Fclinical-considerations%252Fguide-to-reducing-the-carbon-footprint-of-inhaler-prescribing%252F%2523%253A~%253Atext%253DInhalers%252520contribute%2525203%25252D4%252525%252520of%252CCarbon%252520Footprint%252520of%252520Inhaler%252520Prescribing.%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Df41cfbea5df6645924b751a807777580c82db2b9c4d9c1b221c9c65ec8d7e06b&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=uNalySXf7y6%2FyMdf0p3hQVQo8tdsXWRoFbLW%2FRxquNk%3D&reserved=0). The most common inhalers used in the UK currently are MDIs, containing propellants that are potent greenhouse gases contributing to global warming. The majority of emissions are associated with the use and disposal of pMDIs rather than their manufacture.  
   
[Around 70% of inhalers prescribed in the UK are pMDIs compared to Sweden which prescribes 13% as pMDIs and has lower asthma death rates](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Flink.springer.com%252Farticle%252F10.1007%252Fs12325-020-01233-0%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3D78a9960594dfbab06621fff3fba374badf649c442af9e7a5885536aa9809a691&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=AUwljxqX%2FByw7evAO0y8EoJ%2BiRVifJVJubr%2FkkQZRoE%3D&reserved=0). Also, 90% of relievers prescribed in Sweden are DPIs. [Patients switching from a pMDI-based to a DPI-based maintenance therapy more than halved their inhaler carbon footprint without loss of asthma control.](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fpharmaceutical-journal.com%252Farticle%252Fnews%252Fswitches-to-dry-powder-inhalers-could-halve-carbon-footprint-study-results-suggest%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Da3ca4a0f25cfc95974ed6754b7f56fdb1c8a742bd8d36176a4211ab7815fd009&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=tDMpMfiOs26EdTLbRa57P1880v%2BOCzNnxbSzfx7I4nE%3D&reserved=0)  
   
Reduction in pMDIs usage is encouraged either through switching to DPIs, reducing the amount that is used or switching to lower carbon inhalers. However, the key is about disease control, device choice and inhaler technique which would also reduce environmental impact. Patients’ capabilities and preferences are key components in determining inhaler choice. An effective inhaler which reduces exacerbations and rescue use would reduce overall costs.  
   
Right drug – Right device – Right patient

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| **Practical tips on reducing the carbon footprint of inhaler prescribing** |
| Familiarise the different inhaler types (MDIs, BAIs, DPIs, SMIs): [carbon footprint of inhalers](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fgreeninhaler724562029.files.wordpress.com%252F2021%252F10%252Fcs53277-reducing-carbon-footprint-of-inhaler-prescribing.v4.pdf%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Dc9957f39d02693a425f5d9f959d658dade465d699e16eb177e63a6fa80d556cd&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=msquTRYDSk93iT9uO6zn%2Fw6PmXRSkfqIPkaGxu50dy4%3D&reserved=0)   * Typical 120 or 200-dose preventer MDI (~19 kg CO2e) * Typical DPI (<1 kg CO2e) |
| Update your practice ‘medication formulary’ to include lower carbon alternatives |
| Prescribe by brand name only (e.g. if you prescribe generic Salbutamol, any brand can be issued to the patient depending on pharmacy choice) |
| Use NICE patient decision aid flow chart to assess the inhaler technique   * MDIs slow & steady breaths, over 3-5 sec (requires breath /actuation coordination or spacer) * DPIs quick & deep breaths, within 2-3 sec |
| Prioritise prescribing DPIs where appropriate, especially when initiating an inhaler |
| Consider MART regime: combination ICS & Formoterol (e.g. Duoresp Spiromax, Fobumix Easyhaler & Fostair Nexthaler 100/6 have <1kg CO2e per inhaler) Reduces over-reliance on SABAs, simplifies therapy, reduces the risk of severe exacerbations; most licenced MART inhalers are DPIs |
| Change to stronger inhalers with few doses (e.g. Beclomethasone easyhaler 100mcg two puffs bd à 200mcg one puff bd)   * Reduce wastage, improves compliance & cheaper for patient |
| If pMDIs are unavoidable, choose a brand & regime that minimises carbon emissions (use [OpenPrescribing](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fopenprescribing.net%252F%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Dcc960cc6246d52b3fd1a4d0d43e2c9bca24a1e44d3225c1c21d7fbe553941639&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=5UXB6Yo7RWxrDTpewrJVMe8XaXm3CcVAjztGVWp4v%2BM%3D&reserved=0); consider changing to low carbon inhaler through shared decision-making)   * Ventolin Evohaler MDI (~28 kg CO2e) à Salamol MDI (~10 kg CO2e) * Flutiform or Symbicort MDI (~35 kg CO2e) à other preventer MDI (~19 kg CO2e) |
| Review patients requesting multiple SABA inhalers |
| Review patients using a mixture of pMDI & DPI inhalers; better to have only one inhaler type to avoid errors arising from using different inhalation techniques |
| Train & then check inhaler technique to prevent wastage (e.g. inhalers with no dose counter; use of a spacer with MDI; use placebo devices and promote [Rightbreathe](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.rightbreathe.com%252F%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Dcd487ecf577324a3fdfb663941e838e0124ada4cac9d9a9cf6654ef3c0748b5f&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=FgEfmWjq%2FGw9lFJLvPMP0KvmyBlk7B3TR99gKsxddu0%3D&reserved=0) app & website) |
| Encourage patients to look after their inhalers & not over-order |
| Encourage patients to return their used or unwanted inhalers to pharmacies for environmentally safe disposal (recycling or incineration) |

**Helpful Resources:**  
   
[Safe switch to low carbon inhalers - device change](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.greenerpractice.co.uk%252Fhigh-quality-and-low-carbon-asthma-care%252Fprojects%252Fdevice-choice%252F2-whole-team-approach-to-offering-patients-a-low-carbon-inhaler-device%252F%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3De32f9c710379bfb84a0df3d1ab690f27c11fa25121e1e45edc1628950641451a&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=VUQNZxwRAFssIVkcAtMHBONtRhwKHQ1jLqQEhu1ykx8%3D&reserved=0)  
   
[Device choice](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.greenerpractice.co.uk%252Fhigh-quality-and-low-carbon-asthma-care%252Fprojects%252Fdevice-choice%252F%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3D0714b62760273de547553134185df9cb5b2f5c7b5533c51d116ad99380601f51&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=bJ%2BuXRDkQ02Y%2BrctSaQSQB1upHMkFCTeuGZazOHuu%2B4%3D&reserved=0)  
   
[Carbon footprint of inhalers](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fgreeninhaler724562029.files.wordpress.com%252F2021%252F10%252Fcs53277-reducing-carbon-footprint-of-inhaler-prescribing.v4.pdf%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3Dc9957f39d02693a425f5d9f959d658dade465d699e16eb177e63a6fa80d556cd&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=msquTRYDSk93iT9uO6zn%2Fw6PmXRSkfqIPkaGxu50dy4%3D&reserved=0)  
   
[environmental impact of inhalers](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.youtube.com%252Fwatch%253Fv%253DFJ2MT2cjTS8%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3D5119bf10bf7dc8b976e858c7251d3094c255592189049563a294ce3c7a49c7e5&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=WU7pbegl0o0XMtO2eIJALyizcv51i%2FwMMTdzXXkctlA%3D&reserved=0) and [optimising asthma reviews](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fwww.youtube.com%252Fwatch%253Fv%253DclDhs_GfGlU%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3D00d8a44b1cbc5488b7a20b0574ff75042210b9b3c76cb89c5ddd8cf0711d2dac&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116209340%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=4GIggXPoHAd%2Bt%2BNXcvIboq1L%2B3YAElkdScbh%2BrUmJxg%3D&reserved=0)  
   
Utilise [Green Inhaler](https://gbr01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fus19.mailchimp.com%2Fmctx%2Fclicks%3Furl%3Dhttps%253A%252F%252Fgreeninhaler.org%252F%26xid%3Decb14292bb%26uid%3D107420946%26iid%3D10488530%26pool%3Dtemplate_test%26v%3D2%26c%3D1675764463%26h%3D8fbdb78f607a86f3e74e29814fc5eb893a13429f92c374d1544876723490d18a&data=05%7C01%7Cvasusiva%40nhs.net%7C108bfb529b3c4a78739008db08f3f203%7C37c354b285b047f5b22207b48d774ee3%7C0%7C0%7C638113616116365562%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=E%2B3aBS%2FIB0iR8s%2FzRfW%2F50ghBv5iPV3J1u2kglhqY7M%3D&reserved=0) resources as an educational tool for both patients and staff