

High Quality, Low Carbon Asthma Care

A 5-step approach for busy office-based clinicians

Why?

- Climate change is the single greatest threat to human health in the 21st century (Lenzer et al, 2021)
- Healthcare contributed disproportionately to climate change through outsized CO2 emissions – many of which are unnecessary and don't contribute to patient care (Eckelman et al, 2018)
- Metered-dose inhalers (MDIs) contain HFA, a potent GHG. Each MDI has the carbon footprint equivalent of driving up to 170km (Stoynova & Culley, 2023)
- One BC Health Authority's yearly inhaler use = driving around the earth 979 times (Liang et al, 2022)

How do we decrease carbon footprint of treatment while providing BETTER quality care?

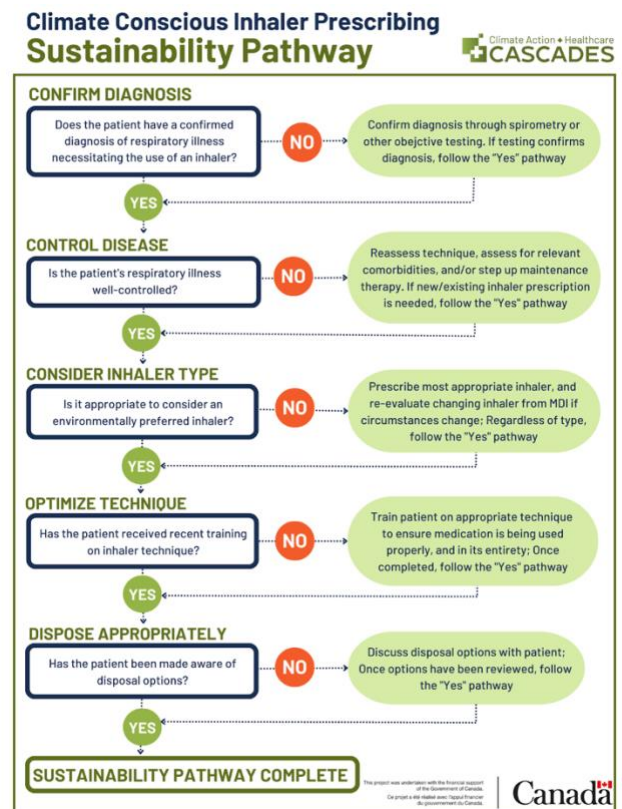
- 1) Does my patient actually **need** an inhaler?
 - Always confirm diagnosis with spirometry, pulmonary function test or metacholine challenge test (BC Choosing Wisely, 2021)
 - A third of Canadians with physician-diagnosed asthma or COPD don't have lung disease on objective testing – yet 80% of those with normal spirometry remain on inhalers (Aaron et al, 2017)
 - Inhalers are often prescribed for indications where there is no evidence of benefit (e.g. post-viral cough, allergies, chronic cough, non-specific shortness of breath) (Ebell et al, 2013)
 - Prescribing inhalers without a confirmed diagnosis can lead to patient harm (Kavanaugh et al, 2019)

- 2) Are symptoms under good **control**?
 - Assess asthma/COPD control at each visit and increase maintenance inhaler if necessary.
 - Using less than two rescue inhalers/year improves morbidity and mortality (Nwaru et al, 2020)

- 3) Which inhaler device **type** works best for my patient?
 - There are 11 different kinds of inhalers available on the Canadian market – dry-powder inhalers are often the cheapest per dose in each inhaler category (Stoynova & Culley, 2023)
 - Visit www.BCinhalers.ca for easy green substitutions.

- 4) Does my patient have good **technique**?
 - Review inhaler technique (or ask pharmacist to review inhaler technique) at each visit/refill
 - www.lung.ca → “Lung Health” drop down menu → “How to use your inhaler”

- 5) Does my patient know how to safely **dispose** of their inhaler?
 - A third of the carbon footprint occurs after disposal (Janson et al, 2020). Encourage patients to return empty inhalers to the pharmacy for safe disposal



****No one should ever feel guilty about needing inhalers to manage their lung disease. We know that well controlled asthma/COPD will always have a lower carbon footprint (regardless of maintenance inhalers used) compared to an ER visit or hospital admission for an exacerbation (Wilkinson et al, 2021).*

Want to learn more? Join the conversation!

- CASCADECanada.ca
- National Sustainable Inhaler Community of Practice – meets monthly
- Webinar on sustainable Primary Care Feb 27th

SUSTAINABLE INHALER ALTERNATIVES

Cost and coverage for asthma and COPD inhalers in British Columbia

←
Least Environmentally Preferable
→
Less Environmentally Preferable
→
More Environmentally Preferable
→

Do not FORCE inhaler switches

Can result in lack of control, exacerbations, and further emissions.

Reliever Therapy

MDI

Low Volume MDI

Dry-Powder Inhalers (DPIs)

ICS Maintenance

Metered Dose Inhalers (MDIs)

Dry-Powder Inhalers (DPIs)

✓

✗

Not a Benefit

SA

Special Authority

ICS/LABA

Dry-Powder Inhalers (DPIs)

Ensure that inhaler choices are clinically appropriate for the patient and that correct inhaler technique is reviewed.

View videos demonstrating inhaler technique at lung.ca/lung-health/how-use-your-inhaler

LABA, LAMA, and LABA/LAMA inhalers are currently only available as DPIs or soft-mist inhalers (SMIs), so they are already environmentally preferable!

Anoro Ellipta

Duaklir Genuair

Incruse Ellipta

Inspiroto Respimat

Onbrez Breezhaler

Oxeze Turbuhaler

Seebri Breezhaler

Serevent Diskus

Spiriva Handihaler

Spiriva Respimat

Tudorza Genuair

Ultibro Breezhaler

Triple Therapy

MDI

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