4 HIGH CARBON MEDICAL PRODUCTS

4.1 Prescribing of low-carbon reliever inhalers (SABA) and preventer (ICS-LABA) inhalers (ENV-10)

4.1.1 Documentation sheet

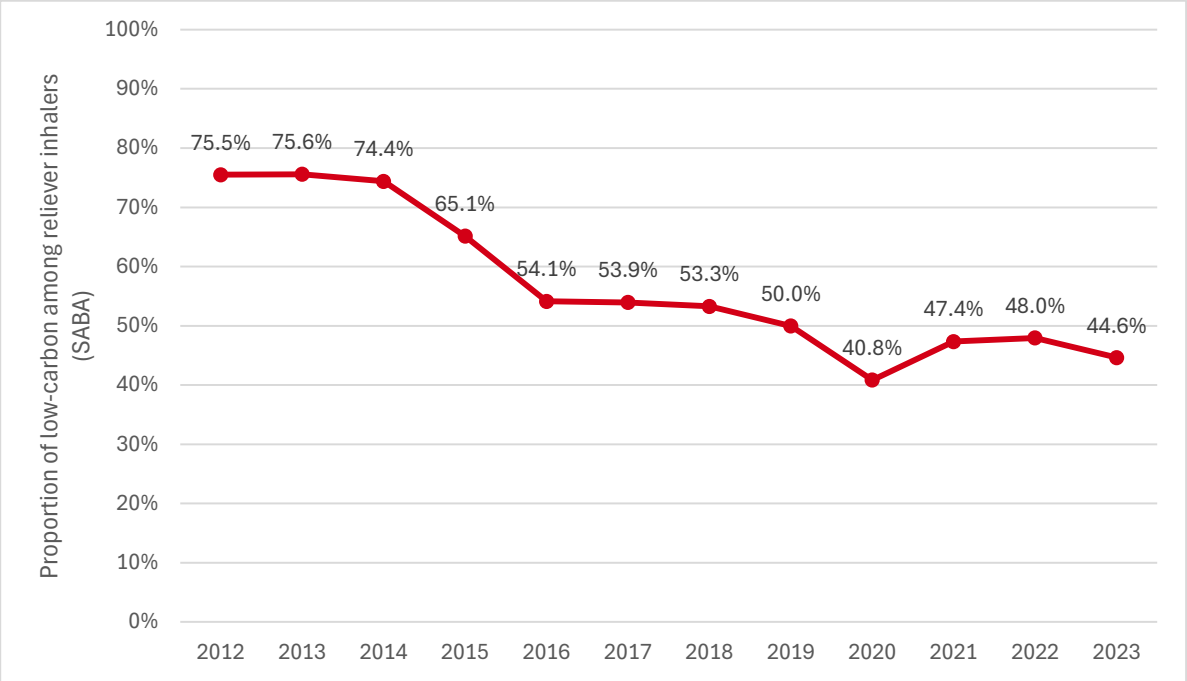
Description	**Primary indicators**: Prescribing of low-carbon reliever (SABA) inhalers as a proportion of all SABA inhaler prescribing (%) Prescribing of low-carbon preventer (ICS-LABA) inhalers as a proportion of all preventer inhaler prescribing (%)
Rationale	Inhalers are used by patients with respiratory diseases (e.g. asthma, chronic obstructive pulmonary disease (COPD)) either to relieve patients from symptoms, or to prevent symptoms. Currently marketed metered-dose inhalers (MDIs) use propellant gases with a high global-warming potential. Other forms of inhalers, such as soft mist or dry powder inhalers (DPIs) have a much more lower impact and should be substituted whenever possible.
Calculation	Sum of all quantities of liquid and dry powder inhalers (=low carbon) divided by the total quantity of inhalers (liquid, dry powder and pressurised metered-dose inhalers)
Data source	IMA – AIM (Pharmanet and Gezondheidszorg – Soins de Santé (GZSS) datasets)
Technical definitions	For relievers, short-acting beta agonists (SABA) have been selected based on a reference file from INAMI – RIZIV (ATC-5 codes: R03AB02, R03AB03, R03AC02, R03AC03, R03AC04, R03AC08, R03AC18); among them, MDIs, DPIs and soft mist inhalers have been selected to calculate the ratio. The same has been done for preventers by selecting inhaled corticosteroid (ICS) and long-acting beta agonists (LABA) (ATC-5 codes: R03AC05, R03AC12, R03AC13, R03AK06, R03AK07, R03AK08, R03AK10, R03AK11, R03AK12, R03BA01, R03BA02, R03BA03, R03BA05, R03BA08).
International comparability	NHS England has a public dashboard.[1]
Limitations	-
Dimension	Environmental sustainability
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Reviewers	Diego Castanares (KCE), Antoine Froidure (Cliniques universitaires Saint-Luc)

4.1.2 Results

BELGIUM

The proportion of low carbon reliever inhalers have been decreasing over the studied period (2012-2023), going from 75.5% in 2012 to 44.6% in 2023 (Figure 1).

Figure 1 – Proportion of low-carbon inhalers among all reliever inhalers (2012-2023)

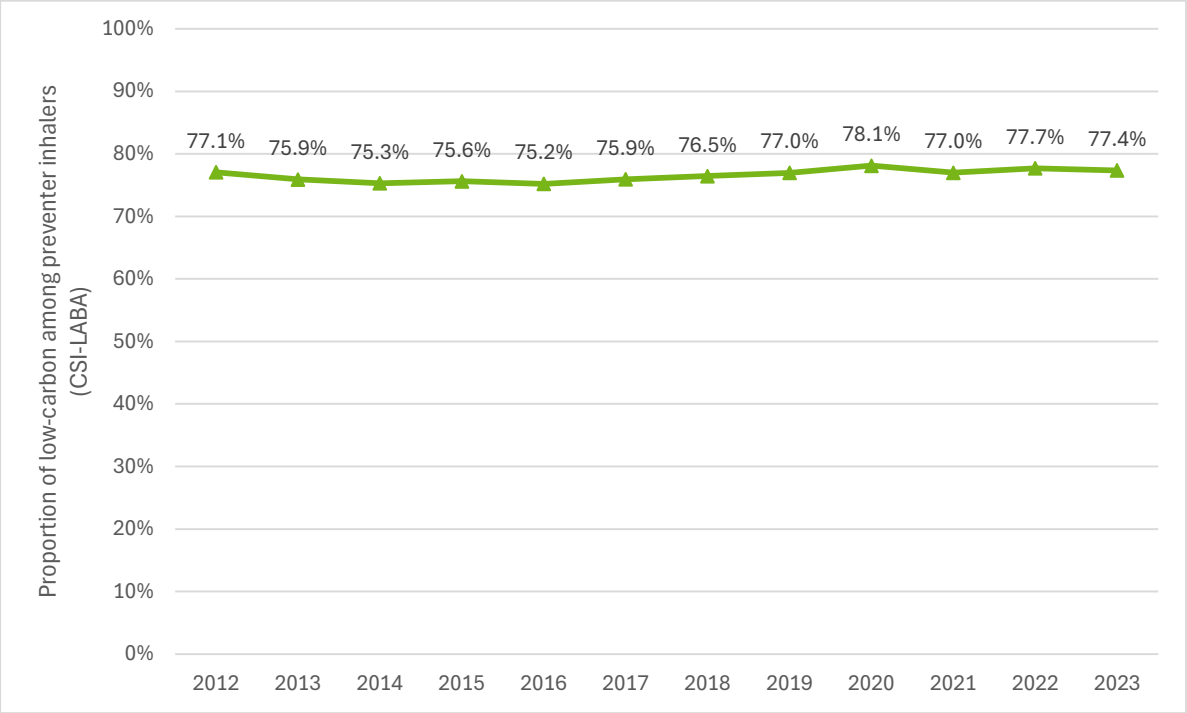


Source: IMA – AIM

This can be explained by two factors: the use of relievers has decreased by 50.7% between 2012 and 2023 (favouring preventers instead for asthma patients, except for children), and some specific low-carbon inhalers have almost disappeared over the period. The move towards more targeted SABA use could imply that when a SABA is used, it is in more severe cases and there is currently a lack of suitable low-carbon, high-efficacy alternatives that can deliver the necessary rapid relief for severe cases.

For the same period, the proportion of low carbon preventer inhalers has been stable: between 75% and 78% (see Figure 2); the total quantity of preventer inhalers has decreased by 7.2% in 2023 compared to 2012.

Figure 2 – Proportion of low-carbon inhalers among all preventer inhalers (2012-2023)

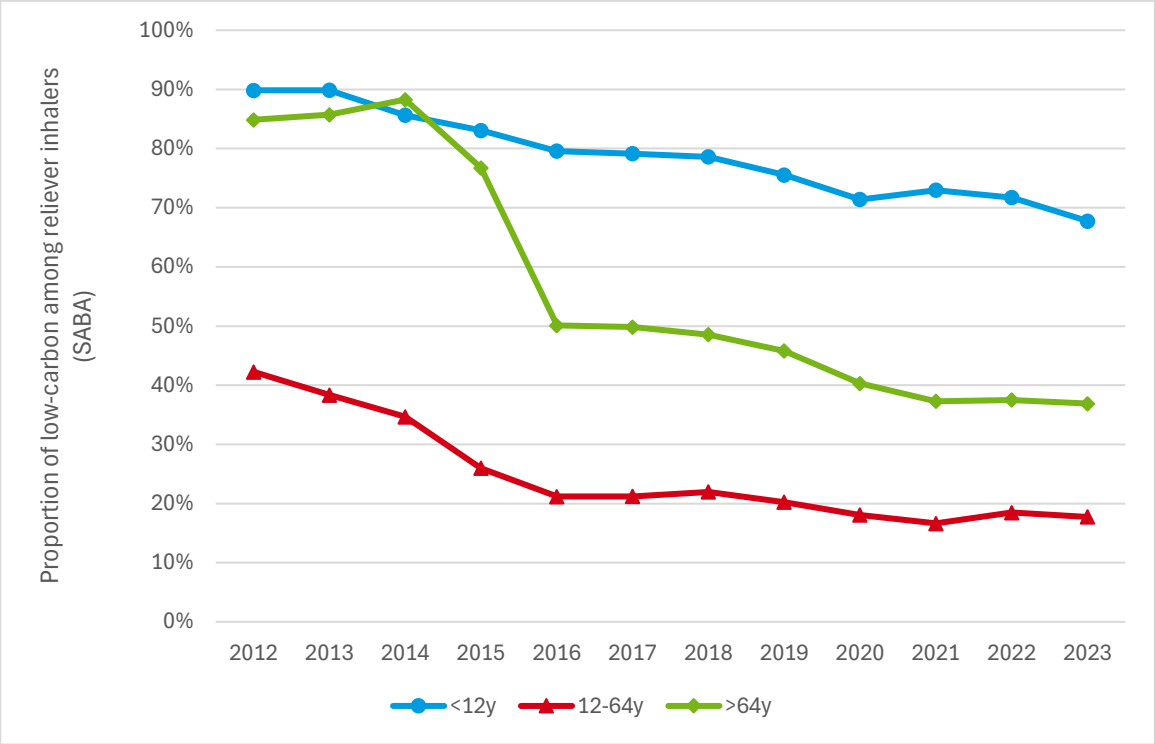


Source: IMA – AIM

ANALYSIS BY AGE

For reliever inhalers, adults (12-64 years old) have the lowest proportion of low-carbon inhalers use (17.7% in 2023), followed by older people (>64 years old) with an important decrease in 2015 and 2016 (36.9% in 2023); children (<12 years old) have a high proportion of low-carbon inhalers use, but it is dwindling from 89.8% in 2012 to 67.7% in 2023 (Figure 3). The use of reliever inhalers has strongly decreased over the period for older people (-73.9%), more than for adults (-33.9%) and children (-43.5%).

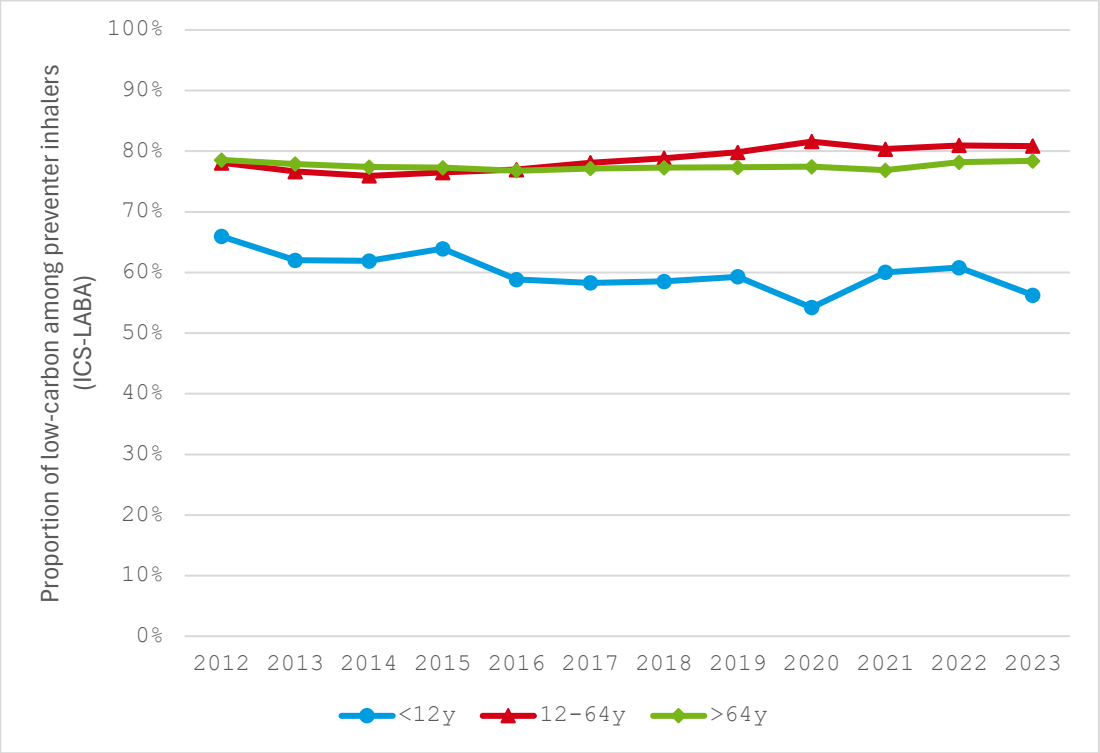
Figure 3 – Proportion of low-carbon inhalers among reliever inhalers (SABA) by age category



Source: IMA – AIM

For preventer inhalers, there is almost no evolution over the 2012-2023 period for adults (from 78.1% in 2012 to 80.9% in 2023) and older people (from 78.6% in 2012 to 78.4% in 2023); children's consumption of low-carbon inhalers has decreased from 66.0% in 2012 to 56.3% in 2023 (see Figure 4).

Figure 4 – Proportion of low-carbon inhalers among preventer inhalers (ICS-LABA) by age category

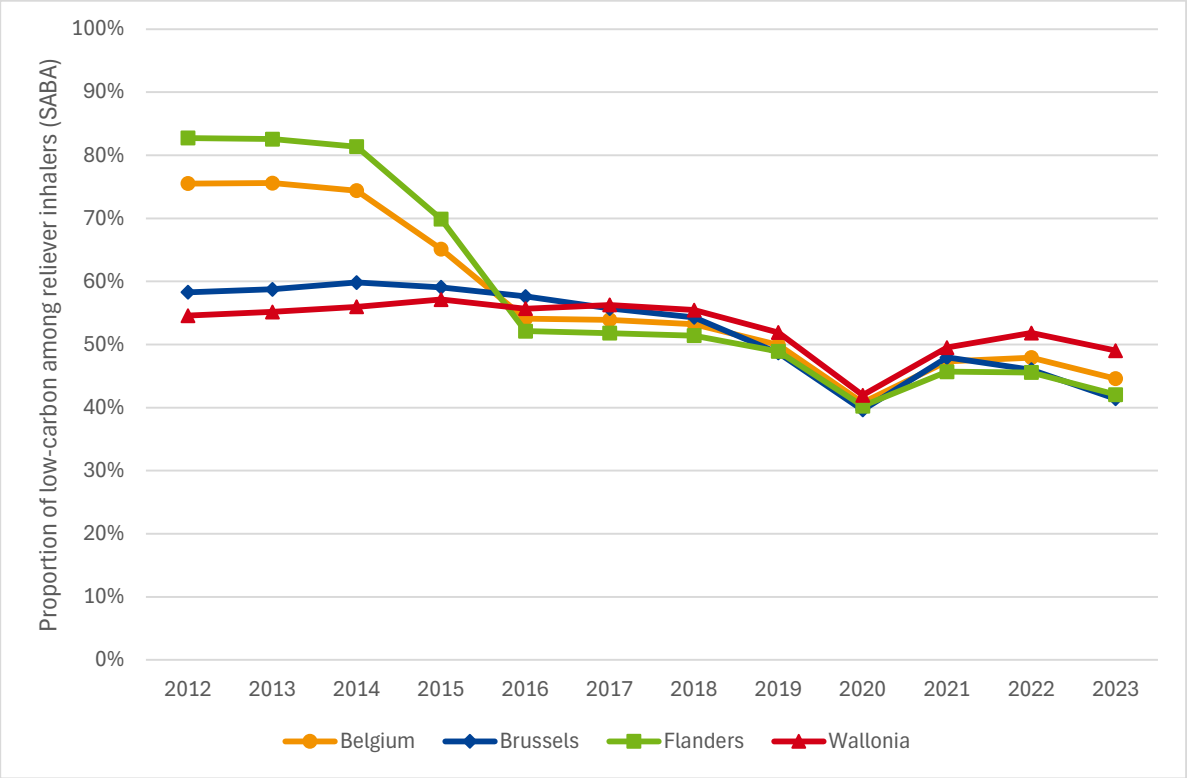


Source: IMA – AIM

REGIONAL COMPARISON

Flanders was the best in 2012 with 82.7% of low-carbon inhalers for relieving patients compared to other regions (Wallonia: 54.6%, Brussels: 58.3%) but the tendency has reversed over time with 42.1% in 2023 for Flanders, 41.4% for Brussels and 49.0% in Wallonia (Figure 5); all regions showed a decrease in the proportion on low-carbon reliever inhalers over the 2012-2023.

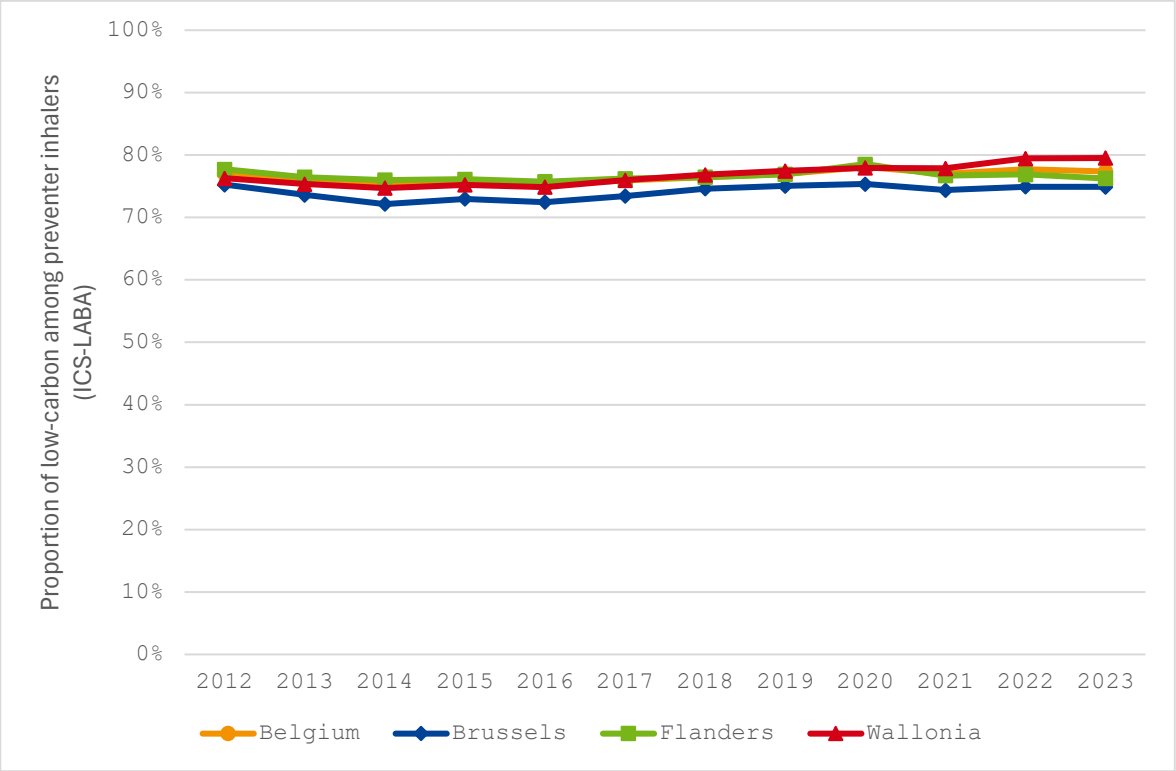
Figure 5 - Proportion of low-carbon inhalers among reliever inhalers (SABA) by region



Source: IMA – AIM

For prevention inhalers, the proportion of low-carbon inhalers has been stable between 72.3% and 79.5% over the 2012-2023 period in the 3 regions (Figure 6), the figures for 2023 are 74.9% for Brussels, 76.3% for Flanders and 79.5% for Wallonia.

Figure 6 – Proportion of low-carbon inhalers among preventer inhalers (ICS-LABA) by region



Source: IMA – AIM

INTERNATIONAL COMPARISON

There are few data available from abroad on the proportion of low-carbon inhaler use for SABA and ICS-LABA. Some publications are based on sales (data collected by IQVIA). Vartiainen et al. calculated that 5.9% of DPI (low-carbon) for 94.1% of PMD (high-carbon) SABA inhalers were sold (in doses) in 2021 in Denmark, Finland, France, Germany, Italy, Norway, Spain, Sweden and the UK.[2]

In England, this proportion has been monitored and a dashboard is available.[1] The most recent figures available online from the NHS respiratory dashboard (November 2025) show 9.7% of low-carbon use for reliever inhalers and 53.7% for preventer inhalers. Geographic variations were also observed.[1] Tian et al. found out that the low-carbon inhalers proportion used is low over the studied period (2016-2021): 26.3% in 2020-2021 for all inhalers, around 6% for SABA inhalers.[3]

KEY POINTS

Use of low-carbon inhalers should be pushed for respiratory diseases treatment

- Low-carbon inhaler for relieve purposes (SABA) have been used less often over time (2012-2023) , reaching 45% in 2023. A decrease of use of SABA inhalers (-50.7% over the period) has been observed between 2012-2023; it may partly be explained by a change of treatment practice. As relieve inhalers' use becomes more targeted to more severe cases, the lack of effective low-carbon alternatives for severe cases limits their uptake.
- Low-carbon preventer inhalers (ICS-LABA) use has stayed high (77% in 2023), and the total prescribed decreased by 7.2%.
- There are differences of low-carbon use by age category: for reliever inhalers, children (<12y) have a higher proportion (67.7% in 2023, for 17.7 for adults (12-64y) and 36.9 for older people

(>64y)); it is the opposite for preventer inhalers as children reach 56.3% while adults stay high at 80.9% as well as older people at 88.4%

- Similar rates are observed in Flanders (42% in 2023) and Brussels (41%) while Wallonia has a higher rate (49%) for low-carbon reliever inhalers. For preventer inhalers, there are no disparities between regions and the rates over the 2012-2023 period are stable (between 75% and 80%)
- There are few corresponding data available from abroad, but from what has been gathered, Belgium is doing better

REFERENCES

1. NHS: Respiratory - Carbon Impact dashboard https://www.nhsbsa.nhs.uk/access-our-data-products/epact2/dashboards-and-specifications/respiratory-carbon-impact-dashboard
2. Vartiainen V, Janson C, Hisinger-Mölkänen H, Lehtimäki L, Wilkinson A. Trends in inhaler use and associated carbon footprint: a sales data-based study in Europe. BMJ Open Respiratory Research. 2025;12:e002424. https://doi.org/10.1136/bmjresp-2024-002424
3. Tian J, McGrogan A, Jones MD. Temporal and geographical variation in low carbon inhaler dispensing in England, 2016 to 2021: an ecological study. Journal of the Royal Society of Medicine. 2022;116(2):65-75. https://doi.org/10.1177/01410768221133566