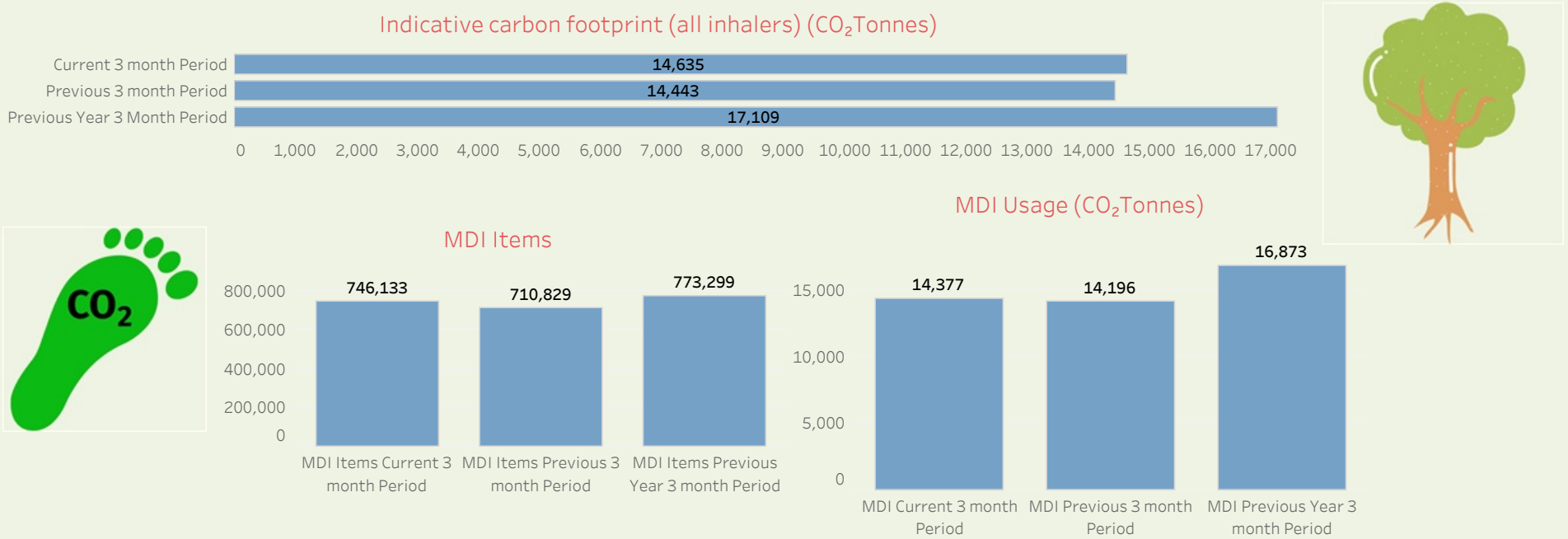
AWTTC
All Wales Therapeutics & Toxicology Centre

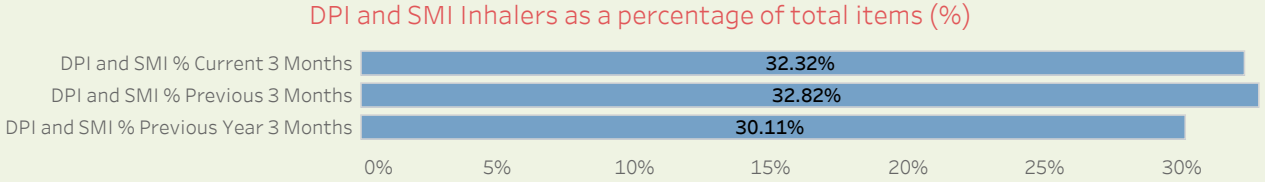
Measuring the carbon footprint of inhaler use within primary care in Wales

Introduction

The Welsh Analytical Prescribing Support Unit (WAPSU), the analytical unit of the All Wales Therapeutics and Toxicology Centre (AWTTC), has developed a dashboard to report on progress in reducing the carbon footprint of inhalers used within primary care in Wales. Currently these carbon footprint data are related to the use of the inhalers only. This report is intended as a brief summary overview of some of the key metrics provided within that dashboard.

Summary of Progress Made in Reducing the Indicative Carbon Footprint, Current 3 Month Period = November 2022 to January 2023, Previous 3 Month Period = August 2022 to October 2022, Previous Year 3 Month Period = November 2021 to January 2022





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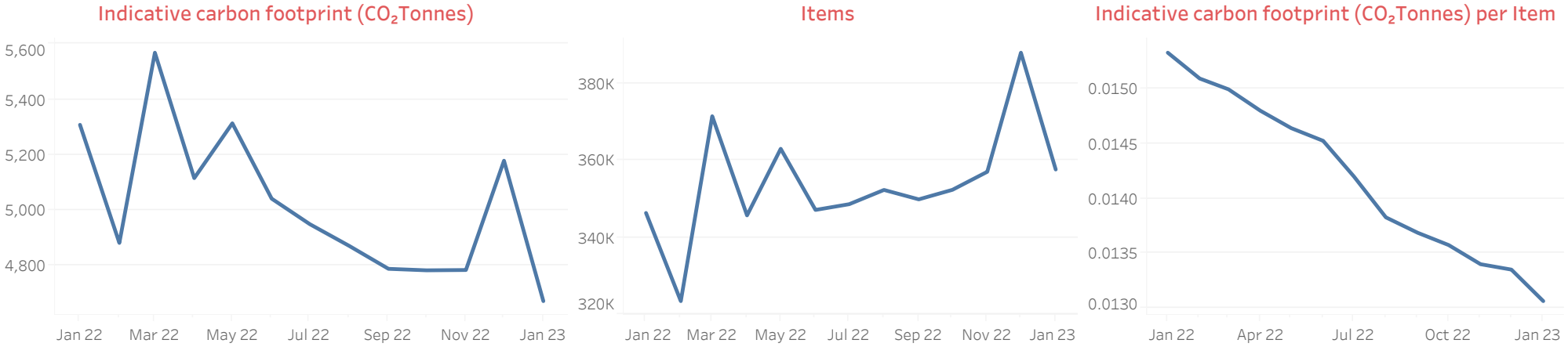
Annual change

To show change across comparative periods, **Table 1** provides the key metric data for the latest month and the same month of the previous year. **Figure 1** provides the main metrics in a graphical form.

Table 1. Percentage change in key metrics since equivalent month of previous year.

Measure	January 2022	January 2023	Percentage Change
Total number of inhaler items	346,358	357,616	3.25%
Indicative carbon footprint (CO_2Tonnes)	5,308	4,672	-11.98%
Indicative carbon footprint per Item (CO_2Tonnes)	0.0153	0.0131	-14.76%
MDI percentage of indicative carbon footprint (%)	98.59%	98.18%	-0.41%
MDI percentage of total inhaler items (%)	70.44%	67.18%	-4.62%
SABA percentage of indicative carbon footprint (%)	64.30%	60.27%	-6.28%
SABA percentage of total inhaler items (%)	41.02%	40.79%	-0.57%

Figure 1. The indicative carbon footprint, number of inhaler items, and indicative carbon footprint per item issued within primary care in Wales January 2022 to January 2023



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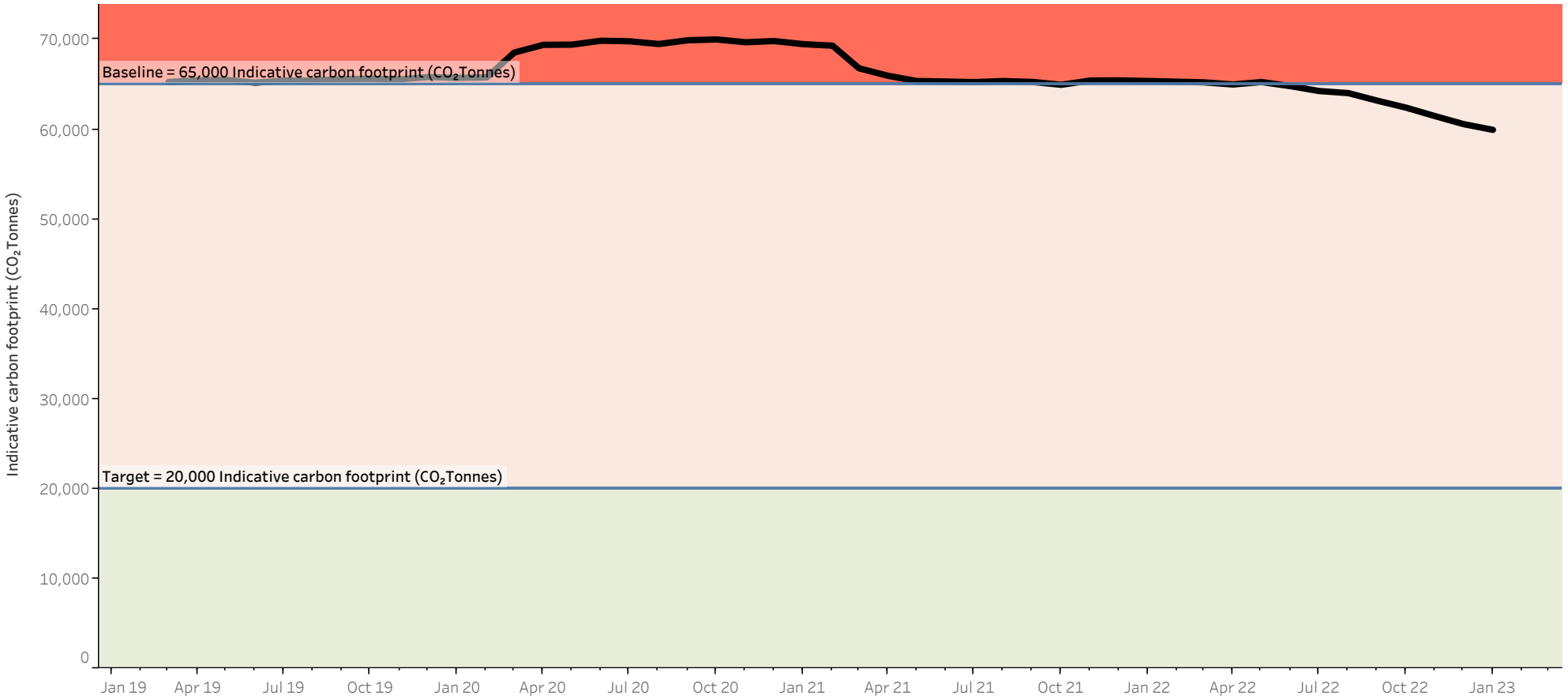
Overall carbon footprint

The target as set out in the NHS Wales Decarbonisation Strategic Delivery Plan is to increase the use of low global warming potential inhalers to 80% of the total inhalers issued by 2025. This equates to a decrease in carbon dioxide (CO_2) to 20,000 tonnes per year by 2025; the equivalent saving of 5,600 airplane trips around the world every year. **Figure 2** shows total current annual carbon footprint based on the latest month's data as a rolling month annual total.

Figure 2. The indicative annual carbon footprint of all inhalers issued within primary care in Wales – from April 2019 to January 2023



Key metrics

Several key metrics are reported on a monthly basis to support the stated target for reducing the inhaler carbon footprint. These are shown in figures 3 and 4 which are presenting monthly data.

Figure 3. The indicative carbon footprint, number of inhaler items, and indicative carbon footprint per item issued within primary care in Wales from April 2018 to January 2023

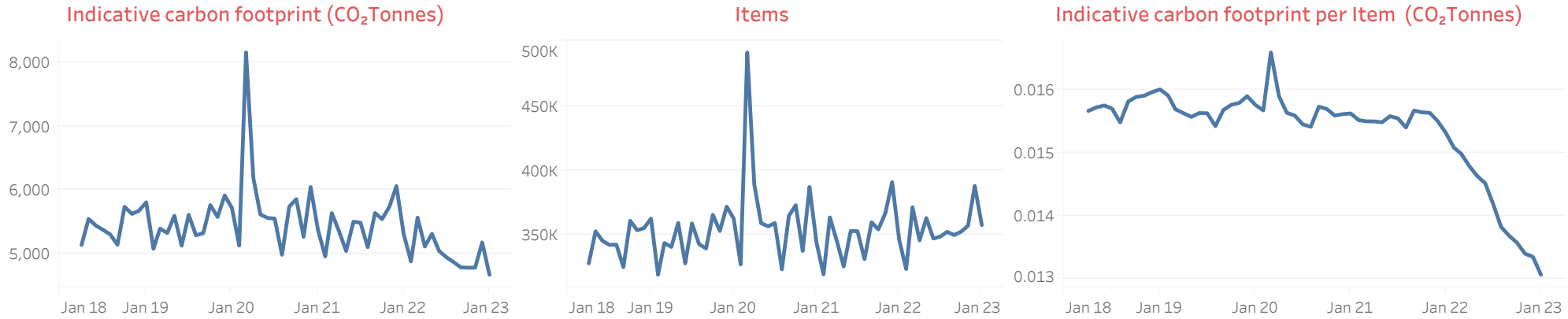
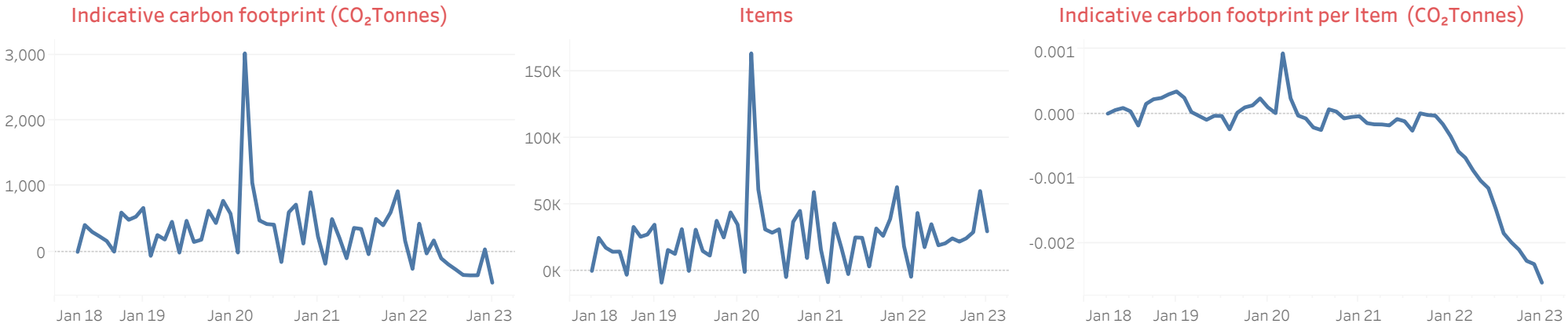
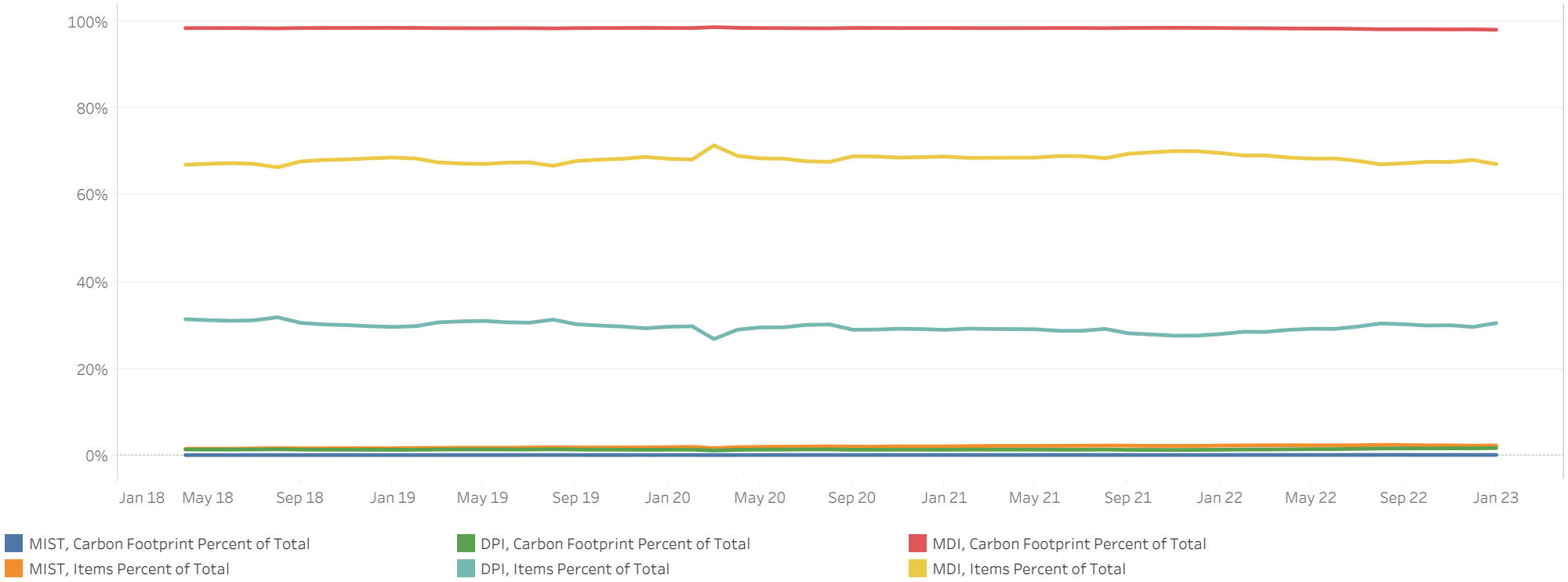


Figure 4. The indicative carbon footprint, number of inhaler items issued, and indicative carbon footprint per item, changes between April 2018 to January 2023, within primary care in Wales from April 2018 to January 2023



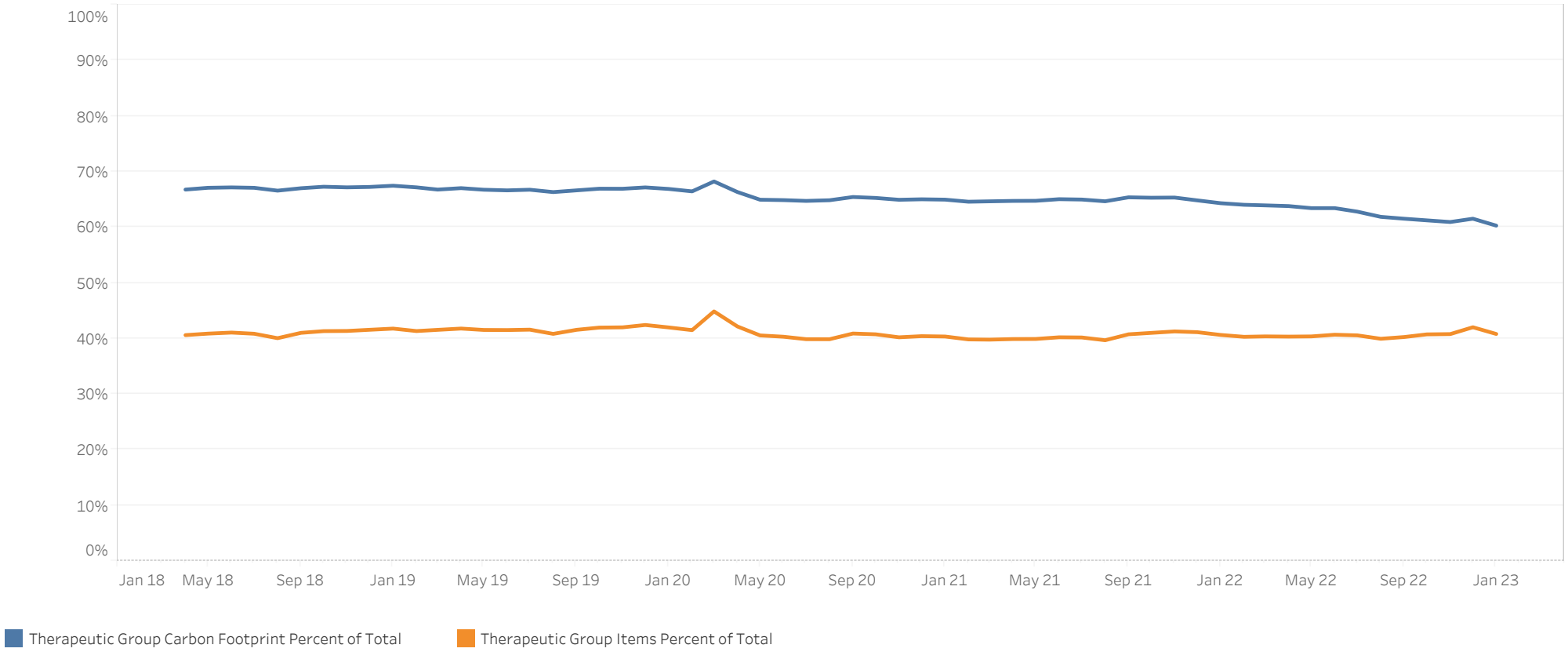
The recent All Wales Medicines Strategy Group (AWMSG) endorsed COPD and Asthma guidelines can support medicines optimisation by providing direction for inhaler choices. Metered dose inhalers (MDIs) have a high carbon footprint when compared to the other available inhaler types, namely dry powder inhalers (DPIs) and soft mist inhalers (SMIs). MDIs currently contribute nearly all of the inhaler carbon footprint. DPIs, and SMIs have a significantly lower global warming potential associated with their use. Therefore, a move to decreasing the use of MDIs, in favour of these alternative inhaler types should make a significant contribution to lowering the environmental impact from the use of inhalers. **Figure 5** provides a trend graph of the percentage of inhaler type by item number and carbon footprint.

Figure 5. Item number and carbon footprint associated with the use of different inhaler types as a percentage of all inhalers issued within primary care in Wales – from April 2018 to January 2023



Short-acting beta-agonist (SABA) inhalers are intended for use in acute situations only. Therefore, regular use could indicate a potential under-optimisation of other therapies. The current All Wales Asthma guideline states that daily reliance on SABAs is associated with an increased risk of severe exacerbations and mortality, reflecting very poorly controlled asthma. **Figure 6** provides a trend graph of the percentage of SABA inhalers by item number and carbon footprint for all of the inhalers issued within Wales.

Figure 6. Item number and carbon footprint of SABA inhalers as a percentage of all inhalers issued within primary care in Wales – from April 2018 to January 2023



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