





1 million exacerbations (asthma attacks) among UK adults with asthma\*1



Every year, approximately 15.5 million blue inhalers are prescribed in the UK for asthma5



characterised by chronic airway inflammation<sup>2,3</sup>

Asthma is a **heterogenous** and **variable** disease

Regular anti-inflammatory treatment with ICS is the mainstay of asthma management to reduce airway inflammation, control symptoms and reduce the risk of exacerbations (asthma attacks).2-4

\*Exacerbations were defined as an acute asthma episode that necessitated a short course of OCS, an A&E visit for asthma, a hospital admission or death secondary to asthma. The adult population was defined as patients aged 18+ with an asthma diagnosis code recorded within 3 years before study entry. Figures are based on a UK adult asthma population of 4.3 million people.

■ However, ICS is frequently under-used 6-8 and many patients over-rely on their blue inhaler (SABA)<sup>6,8-10</sup>

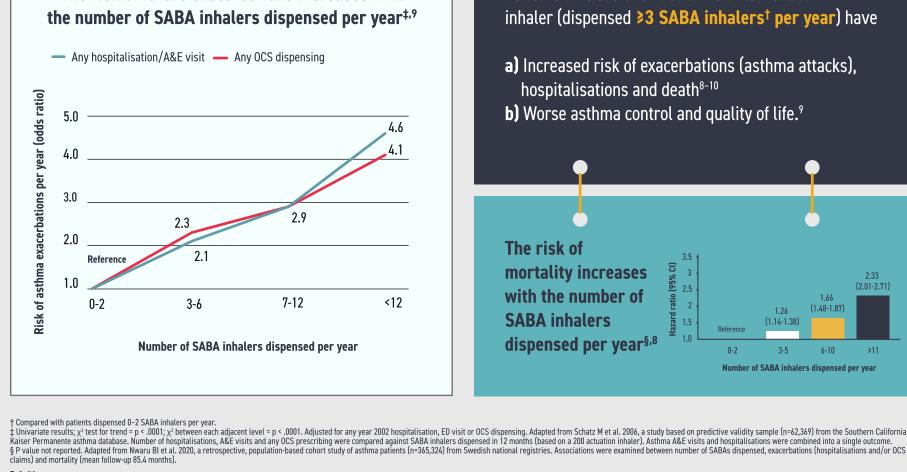
SABAs have no anti-inflammatory properties and

are only recommended for infrequent rescue relief of breakthrough symptoms<sup>2,4</sup>

Increased SABA use is a marker of sub-optimal asthma

**Definitions** ICS: Inhaled corticosteroid, SABA: Short-acting  $\beta$ 2 agonist

## control and is associated with negative outcomes The risk of future exacerbations increases with Patients who are over-reliant on their SABA



inhaler (dispensed ≥3 SABA inhalers† per year) have a) Increased risk of exacerbations (asthma attacks), hospitalisations and death<sup>8-10</sup> **b)** Worse asthma control and quality of life. The risk of mortality increases 2.33 (2.01-2.71) with the number of (1.48-1.87) **SABA** inhalers dispensed per year§,8 Number of SABA inhalers dispensed per year † Compared with patients dispensed 0–2 SABA inhalers per year.
‡ Univariate results; x² test for trend = p < .0001; x² between each adjacent level = p < .0001. Adjusted for any year 2002 hospitalisation, ED visit or OCS dispensing. Adapted from Schatz M et al. 2006, a study based on predictive validity sample (n=62,369) from the Southern California Kaiser Permanente asthma database. Number of hospitalisations, A&E visits and hospitalisations were combined into a single outcome.

no longer recommends SABA alone or as the

The Global Strategy for Asthma Management and Prevention

A&E: Accident and emergency, OCS: Oral corticosteroids, SABA: Short-acting β2 agonist, CI: confidence interval

## preferred reliever for all patients **GINA** no longer recommends: Instead, GINA now recommends: All adults and adolescents with The prescription of a SABA alone for

adults or adolescents, for safety<sup>2</sup>

asthma should be prescribed a preventer containing ICS

Low-dose ICS/formoterol as the reliever,

when this is also used as the



background ICS/LABA maintenance therapy **Definitions GINA:** Global Initiative for Asthma, **ICS:** Inhaled corticosteroid, **LABA:** Long-acting  $\beta 2$  agonist, **SABA:** Short-acting  $\beta 2$  agonist

The SABA use in asthma (SABINA) programme

set out to evaluate prescriptions, exacerbations

and HCRU related to SABA use<sup>11</sup>



**Objectives** — • Examine prescription patterns and the **Study design** — • Retrospective, longitudinal impact of SABA inhaler use on asthmaobservational study related health outcomes in the UK

**574,913** patients were available for prescription analysis primary care consultations and cause of death)

Data pooled from Apr 2007 - Dec 2017 primary care, hospital and mortality records (CPRD, HES and ONS)

336,412 patients included in outcomes cohort (complete data on SABA and ICS prescriptions, hospitalisations,

Definitions
BTS: British Thoracic Society, CPRD: Clinical Practice Research Datalink, HCRU: Healthcare resource utilisation, HES: Hospital Episode Statistics, ICS: Inhaled corticosteroid, ONS: Office for National Statistics, SABA: Short-acting β2 agonist SABINA UK key findings<sup>11</sup>

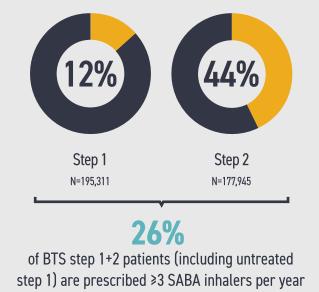
Patients aged >12 years with an asthma diagnosis code recorded within 3 years before study entry. The analysis was based on the BTS/SIGN 2016 guidelines and excluded patients on the highest treatment step as they were likely to be under the supervision of specialist teams, with incomplete CPRD records.

68%

0.79

of patients with asthma (all severities) in the UK are prescribed ≥3 SABA inhalers per year<sup>11</sup>

Percentage of patients in each BTS step prescribed ≥3 SABA inhalers per year



low SABA users — high SABA users

0.90

0.80

0.70

0.60

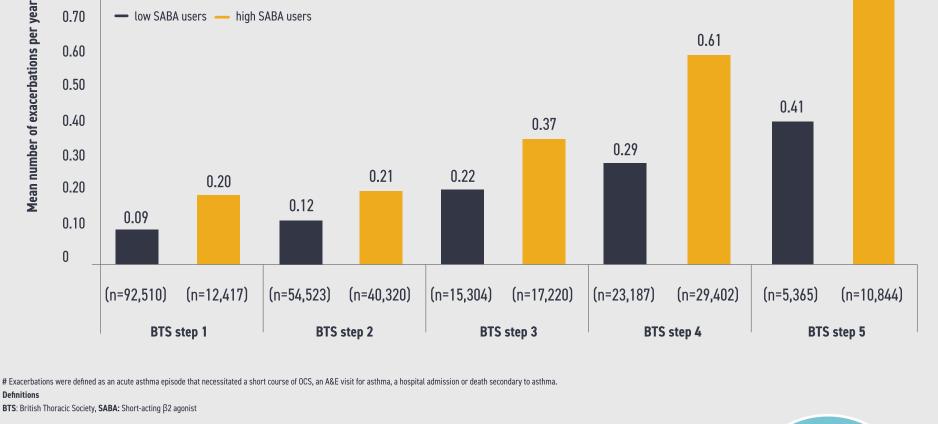
inhalers in the UK<sup>12</sup>



0.61

A signal that they are at increased risk of future exacerbations and increased HCRU as a result

57%



per year, stratified by BTS treatment step#

of the total carbon footprint of inhaler devices in the UK is

SABA inhaler use is a majority contributor to the total carbon footprint of

70% 83% of SABAs prescribed go to patients using ≥3 inhalers/year<sup>12\*</sup> represented by SABAs.<sup>12</sup> ~30kg eCO, per canister<sup>13</sup> CO >250,000 tonnes

In asthma:

SABA over-reliance is common in the UK and is associated with increased risk of poor asthma control, exacerbations (asthma attacks), HCRU and mortality<sup>8-11</sup> SABA inhaler use is a majority contributor to the total carbon footprint of inhalers in the UK<sup>12</sup> the NHS to address their sustainability goals 16,17

~3x (or more)

SABA GHG emissions

observed in other large

European countries<sup>12</sup>

†Calculated on the basis that an average diesel car emits 0.27901kg CO<sub>2</sub>e per mile and that the length of an average car trip is 8.4 miles

SABA: Short-acting \( \beta \) agonist, \( \beta H \beta \): Greenhouse gas, \( \beta : \) equivalent

\*Over-reliance is defined as >3 inhalers/year (pMDI and DPI). This figure is extracted from the SABINA UK study11, and extrapolated to the UK adult asthma population

months)11 and optimise their asthma treatment4

Eliminate SABA-over reliance in asthma

eCO2 per year<sup>12</sup>

>100 million<sup>†</sup>

average car trips per year in an average diesel car<sup>14,15</sup>

In addition to improving asthma outcomes, eliminating SABA over-reliance could support

**Action required** 

Consider system alerts and auditing of patient records to identify these patients<sup>18</sup>

## Identify patients who are over-reliant on their SABA (≥3 inhalers prescribed in the last 12

Educate and empower patients to reduce their reliance on SABA, improve adherence to anti-inflammatory treatment and optimise their self-management. Consider a SABA-free treatment strategy for appropriate patients.<sup>2,4,19</sup>

Educate to support change in patients' attitudes, beliefs and behaviours relating to SABA use<sup>11</sup>

AstraZeneca Asthma care dashboard for auditing practice data & identifying patients at risk AstraZeneca InterACT respiratory educational platform with interactive content

AstraZeneca PCRA educational content for videos and accredited

CPD modules (Clicking on this link will take you to AstraZeneca approved content on a third party website) PCRS Asthma Right Care tool and resources for challenging SABA over-reliance

Tools and resources for HCPs tackling SABA over-reliance

(Clicking on this link will take you to a third party website) CPD: Continuing professional development, HCPs: Healthcare professionals, HCRU: Healthcare resource utilisation, SABA: Short-acting \( \beta \) agonist, PCRS: Primary Care Respiratory Society

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