Impact of NICE Guidelines Change on Asthma Management

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Objective

- Investigate the impact of recent NICE guideline changes (Nov 2024) on asthma inhaler prescribing in England.
- Focus on the shift from traditional SABA inhalers to ICS/formoterol combinations.
- Describe current prescribing patterns across Integrated Care Boards (ICBs).
- Assess clinical outcomes (e.g, Hospital I admissions)
- Assess socioeconomic outcomes (e.g. urban population percentage, percentage of deprivation and Full-time equivalent GPs).

Background

- Asthma is commonly managed with inhalers. The UK has poorer asthma outcomes than other European countries, largely due to overuse of SABA (Short-acting Beta-2 Agonists), which are fast-acting relievers.
- New NICE guidelines (Nov 2024) recommend SABA-free treatment pathways to reduce overuse risks.
- LABA (Long-acting Beta-2 Agonists) should only be prescribed with ICS (Inhaled Corticosteroids).
- New patients should be prescribed a combined inhaler (ICS+LABA).

Table 1. Inhaler types prescribed for asthma.

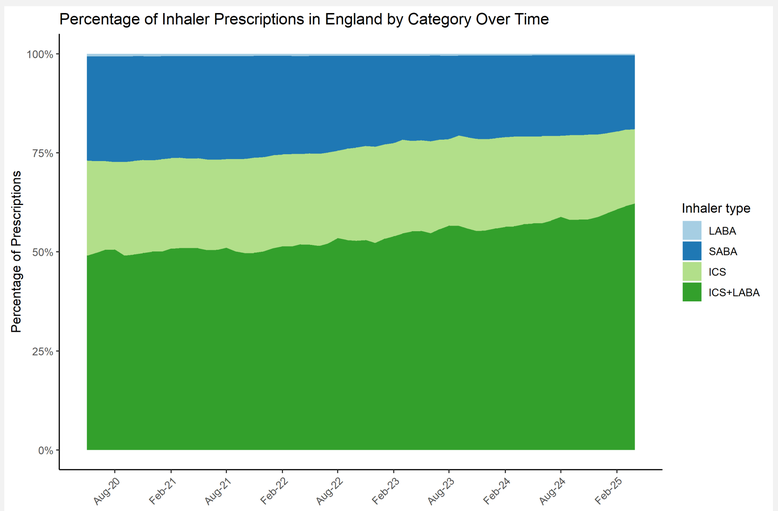
SABA	**Short-acting Beta-2 agonists**	**Relievers** Fast-acting inhalers for immediate symptom relief.
LABA	**Long-acting Beta-2 agonists**	**Controllers** Regular use to reduce inflammation and maintain control.
ICS	**Inhaled Corticosteroids**	**Preventers** Daily use to reduce airway sensitivity and prevent symptoms.
ICS + LABA	**Combined**	**Combination** Enhanced control through combined anti-inflammatory and bronchodilator effects.

Methods

- Compiled a list of UK-prescribable inhaler brands and models from RightBreathe.com.
- Selected inhalers based on four drug classes licensed for adults with asthma.
- Created a BNF codelist for these inhalers for use on the OpenPrescribing website.
- Utilized BNF codelist for an API on OpenPrescribing.net to extract monthly inhaler prescriptions per ICB by drug class and active component.
- Collected data on prescribed combined inhalers and compared it to traditional ICS and relief inhalers.
- Analyzed prescription rates across integrated care boards (ICB) over time to assess adherence to NICE recommendations on combined inhalers.
- Extracted hospital admissions and asthma prevalence data from Fingertips.org to compare outcomes with ICBs that followed new guidelines closely.

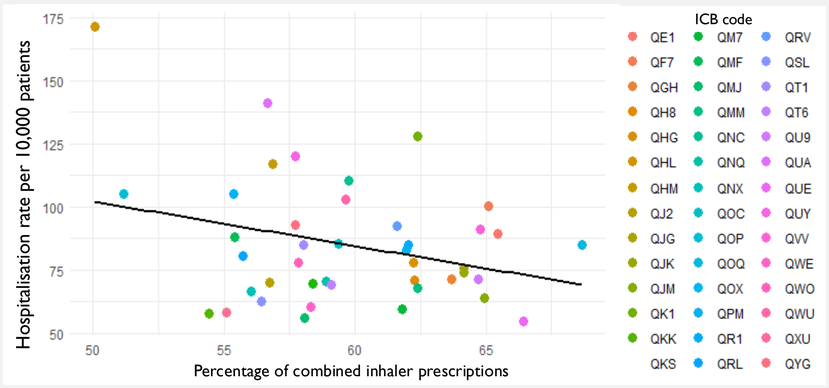
Results

Figure 1. Percentage of prescriptions by inhaler types monthly, 2020-2025.



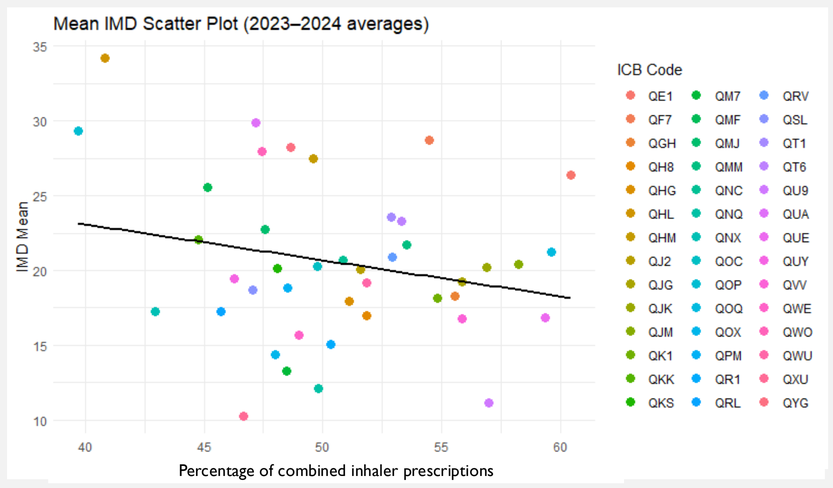
Over time, combined ICS+LABA inhalers are being prescribed at increasingly higher percentage, while SABA and single ICS inhaler prescriptions are declining.

Figure 2. Association between hospitalisations for asthma and combined inhaler prescriptions.



Higher percentage of combined inhaler prescriptions is associated with a lower rate of hospitalisation for asthma.

Figure 3. Association between the Index of Multiple Deprivation (IMD) of an ICB and combined inhaler prescriptions.



Higher deprivation (higher IMD mean scores) is associated with a lower percentage of combined inhaler prescriptions.

Conclusions

- Since 2020, combined inhaler prescriptions have risen, continuing after the November 2024 NICE guideline, indicating early adoption.
- Combined inhaler prescription percentages reflect guideline adoption.
- The share of combined inhaler prescriptions has increased, while SABA prescriptions have decreased, but this varies by ICB, highlighting care quality gaps.
- There's a correlation between combined inhaler prescriptions and health outcomes, such as asthma hospitalization rates.
- Lower combined inhaler prescriptions are found in urban and deprived ICB areas, consistent with the link between deprivation and poorer asthma outcomes in the UK.

Benefits for Patients and Healthcare

- Better alignment with NICE guidance is likely to improve health outcomes and reduce health inequalities, however more research is needed to understand the causal relationship.
- Supports environmentally sustainable prescribing (reduced SABA use which has the highest carbon footprint of all inhalers).
- Identifies care quality gaps across socioeconomic groups highlighting the need for NICE guideline implementation in more deprived areas.

References

- Openprescribing website: Openprescribing.net: Analyse | OpenPrescribing
- RightBreathe.com
- NICE guidance | NICE
- Home | The Health Foundation
- Fingertips | Department of Health and Social Care