

# Variability in management of asthma and Chronic Obstructive Pulmonary Disease (COPD) in England with regards to Short-Acting Beta2 Agonists (SABA) and Oral Corticosteroids (OCS).

HSD118



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## BACKGROUND

- The management of asthma and COPD includes the use of rescue inhalers such as SABAs and OCS such as prednisolone. SABAs provide quick relief from symptoms like wheezing, coughing and shortness of breath. Prednisolone reduces airway inflammation and improves breathing.[1,2]
- Over-reliance on SABAs can indicate poor asthma control and may lead to worse outcomes.[1]
- Frequent use of SABAs in COPD patients can signal inadequate disease management and may be associated with more severe disease progression.[2]
- Using six or more SABA inhalers per year is linked to increased risk of exacerbations and mortality in both asthma and COPD, reflecting poor disease control and correlating with lower quality health outcomes.[1,2]
- Using more than four courses of prednisolone (corresponding to 1000mg) per year is associated with an increased risk of developing comorbidities such as diabetes, osteoporosis, cardiovascular disease, infections, hypertension and adrenal suppression.[3,4]
- A health economic analysis on the cost of OCS-induced morbidity in severe asthma has demonstrated an additional £772 spend on average per patient per year for non-asthma medicines in severe asthma patients with high OCS exposure.[4]
- This analysis aims to understand medicine use and potential variability in patients with asthma and COPD at Integrated Care Board (ICB) level, especially with regards to SABA and OCS.

## METHODS

A relational model was created in Microsoft PowerBI using the following data sources for 2022 (Fig. 1):

- National Health Service Business Services Authority Respiratory Dashboard (NHSBSARD) Prednisolone (OCS) use: the number of unique patients prescribed prednisolone during 12 months.[5]
- NHSBSARD High SABA use: six or more prescriptions for SABA inhalers per year.[5]
- Quality and Outcomes Framework (QoF): OCS use data was normalised to the total number of COPD and asthma patients registered in primary care in England.[6]
- ICB Geography: NHSBSARD data is presented at Sub-ICB-Location level, a mapping exercise was performed to wrap the data up to ICB level and develop heat maps.[7]

A heat map of England showing the variability in % of patients with high SABA use and more than 1000mg of prednisolone was produced.

For prednisolone use, the number of patients using more than 1000mg in the 12 months leading to December 2022 was compared against the total number of asthma and COPD patients derived from QoF data. A line showing the share of these patients on each ICB is also shown.

Figure 1. Relational Model Ontology in PowerBI

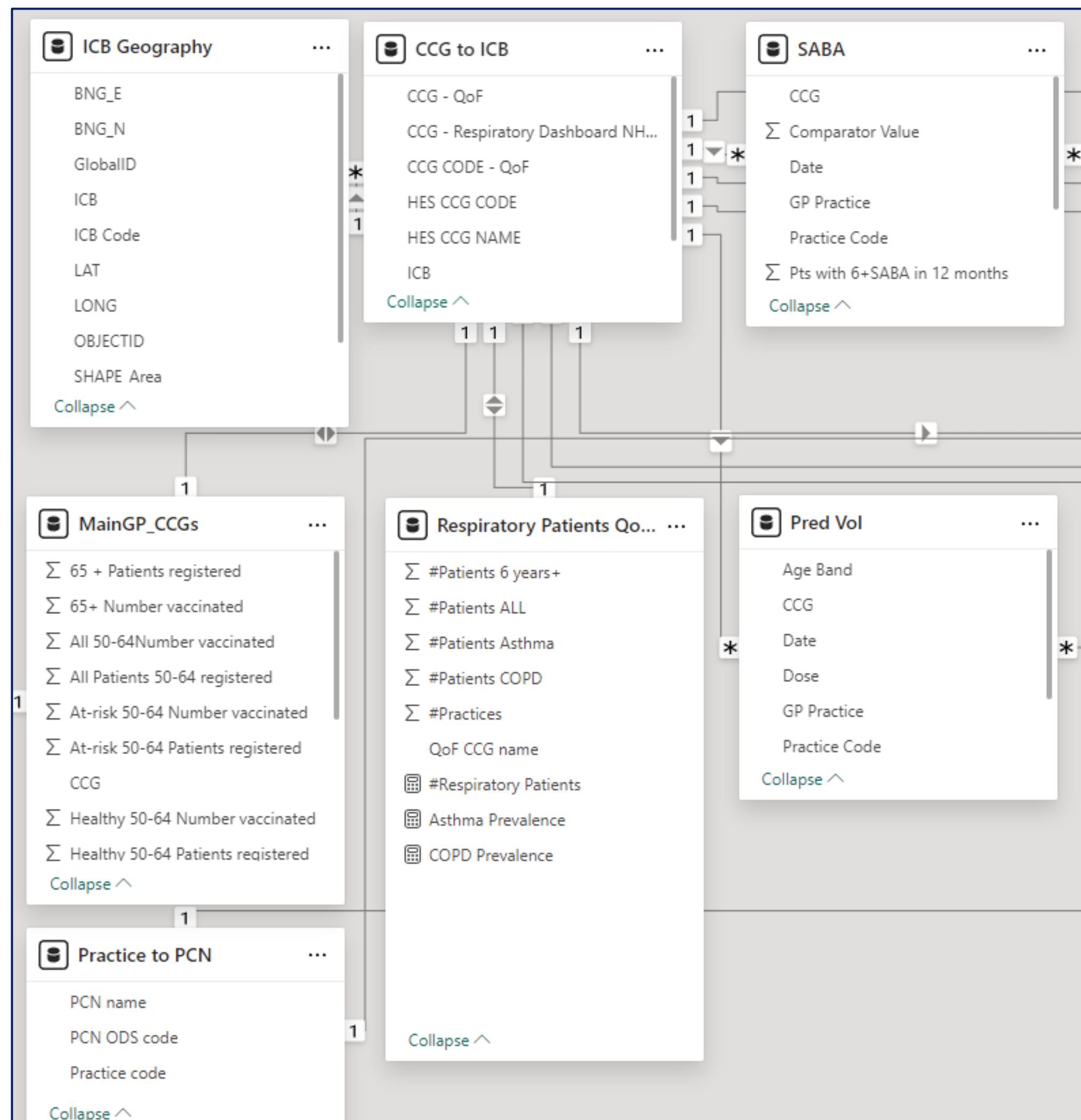


Figure 2. ICB Variability in High-SABA Usage

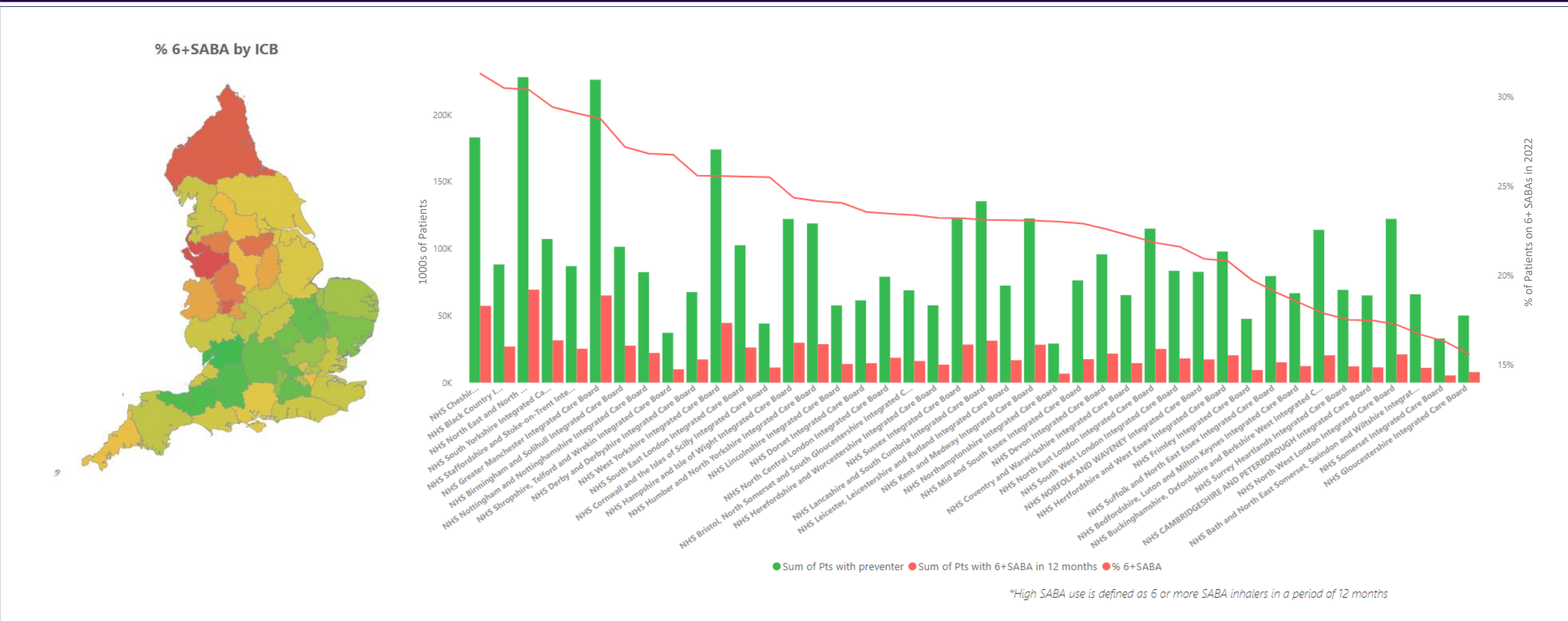
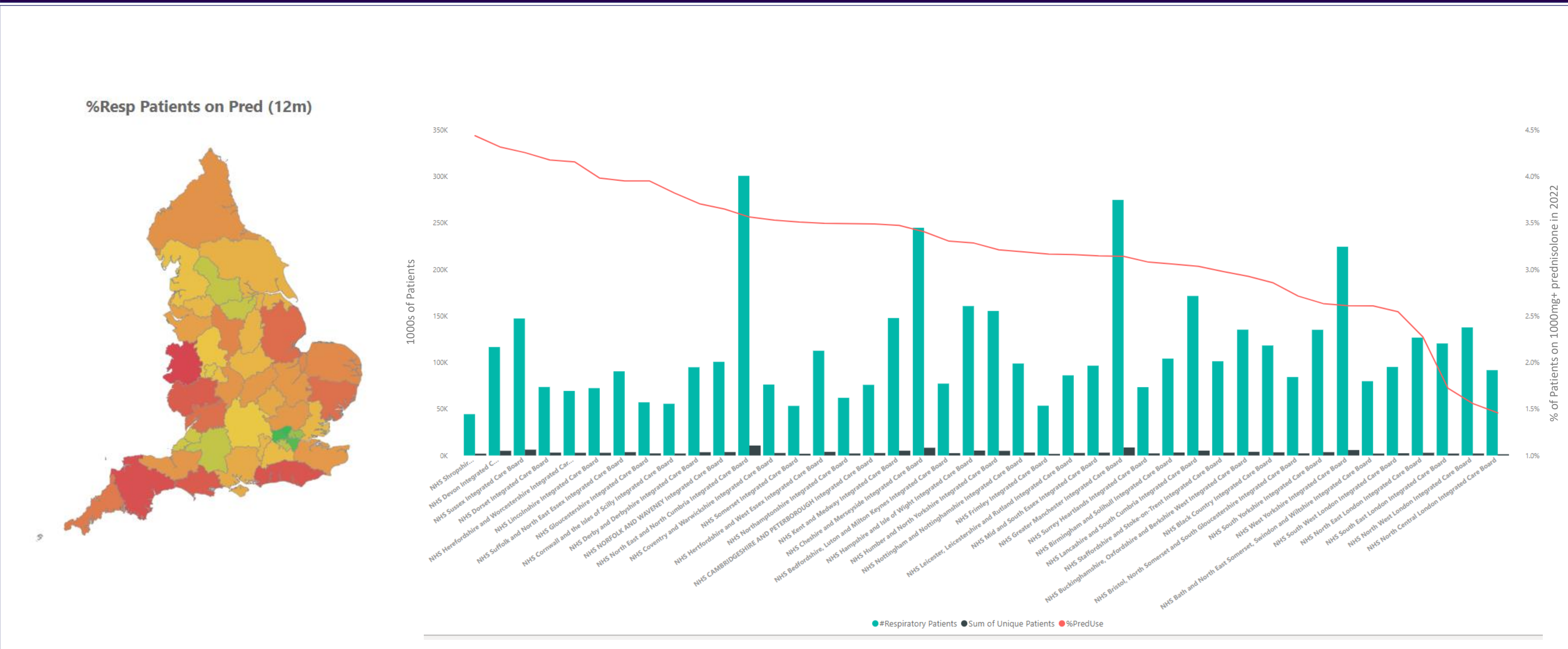


Figure 3. ICB Variability in High-OCS Usage



## RESULTS

- High SABA usage amongst respiratory patients in England in 2022 varied significantly ranging from 16.0% of respiratory patients in Gloucestershire ICB using more than six SABA inhalers a year to 31.3% in Cheshire & Merseyside ICB (Fig. 2).
- For the same year usage of a cumulative prednisolone dose of 1000mg or more (corresponding to more than five courses a year) varied from 1.5% in North/Central London ICB to 4.4% in Shropshire, Telford and Wrekin ICB (Fig. 3).

## DISCUSSION

- The significant variation in high SABA usage across different ICBs highlights disparities in asthma and COPD management. Areas with higher usage may indicate poorer disease control and a need for targeted interventions to improve patient outcomes.
- The correlation between frequent prednisolone use and increased comorbidities underscores the importance of monitoring and managing steroid use in respiratory patients. This is crucial to prevent additional health burdens such as diabetes, osteoporosis, and cardiovascular diseases.
- The variability in medication use may reflect underlying socioeconomic factors. Deprived areas often face higher health inequalities, which can lead to worse disease management and outcomes. Addressing these disparities is essential for equitable healthcare, which align with NHS' priorities aiming at reducing health inequalities in the most deprived 20% of the population. Improving respiratory care in these areas is a priority, and targeted strategies are needed to address the specific challenges faced by these communities.[8]

## CONCLUSIONS

- Need for Targeted Interventions:** High SABA and prednisolone usage indicate areas where asthma and COPD management may need improvement. Targeted interventions can help reduce over-reliance on these medications and improve overall disease control.
- Monitoring and Reducing Steroid Use:** Reducing the frequency of prednisolone courses can help mitigate the risk of developing comorbidities. Implementing guidelines and monitoring systems can support better management of steroid use in respiratory patients.
- Addressing Health Inequalities:** Efforts to reduce health inequalities should focus on improving access to quality respiratory care in deprived areas. This includes education, support, and resources to manage asthma and COPD effectively.
- Supporting NHS Priorities:** The study's findings support the NHS's respiratory priorities and the CORE20+5 initiative. By addressing the identified disparities and focusing on high-risk populations, the NHS can improve health outcomes and reduce the burden of respiratory diseases in England.[8]

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## DISCLOSURES & CONTACT

BV, HR, MDS and RH are employees of Sanofi and may hold shares or stock options in the company. The authors report no other conflicts of interest in this work. This work was funded by Sanofi..  
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