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**Title: The effect of shifting to new NICE Asthma inhaler guidelines**

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**Background:**

The UK has [worse asthma outcomes compared to the rest of Europe](https://www.asthmaandlung.org.uk/media/press-releases/asthma-care-crisis-charity-sounds-siren-asthma-death-toll-rises#:~:text=Key%20risk%20factors%20for%20death,visits%20with%20no%20follow%2Dup.) due to overuse of relief inhalers (Short-acting beta-2 agonists (SABA)). While these inhalers relieve symptoms, they do not treat the underlying cause of asthma and have been [linked to worse asthma outcomes](https://erj.ersjournals.com/content/55/4/1901872), including poor disease management, exacerbation, and mortality. In 2019/20, [international guidance shifted](https://ginasthma.org/wp-content/uploads/2019/06/GINA-2019-main-report-June-2019-wms.pdf) to recommend combined inhaled corticosteroid (ICS)/formoterol inhalers, which also treat the underlying cause of asthma, over relief inhalers alone. However, relief inhalers are [still commonly prescribed in the UK](https://openprescribing.net/measure/saba/), and [guidelines from NICE, British Thoracic Society (BTS), and Scottish Intercollegiate Guidelines Network (SIGN) have historically been conflicting](https://www.bmj.com/content/360/bmj.k29). [NICE has published new guidelines](https://www.nice.org.uk/guidance/gid-ng10186/documents/450) in [November 2024](https://www.nice.org.uk/guidance/indevelopment/gid-ng10186) that align more closely with international and BTS/SIGN recommendations, advocating for the use of combination inhalers (relief + corticosteroid). A national push to switch from relief to combination inhalers could lead to better outcomes, lower costs, and reduced carbon emissions waste.

**The Project**

This project could look to understand the system impacts of the November 2024 NICE guidelines using descriptive analysis (~2 months). Broken down into these stages:

1. Explore literature, NICE guidance, and NHS formularies to understand the old and new recommended asthma pathway. As well as compiling a list of brands and models of inhaler than can be prescribed in the UK.
2. Use OpenPrescribing to extract monthly inhaler prescriptions. Use this to understand the number of combined inhalers prescribed, and as a proportion compared to traditional ICS and Relief inhalers. This would be by Integrated Care Systems (ICS), and over time to understand which areas are best prescribing the NICE recommended combined inhalers.
3. Use Fingertips data to extract hospital admissions from asthma, and mortality rate from asthma, and compare these outcomes to ICS with good adherence to the new guidelines.
4. Further analysis after this could be understanding prescribing variation of inhalers by deprivation and understanding the impact on CO2 emissions.

* Understand current variation in asthma prescribing patterns across Integrated Care Systems (ICS’s)/General Practise’s (GP’s) in England before the new guidelines release, and what the potential for improvement is.
  + Prior to guideline changes some areas will have already moved to an inhaler prescribing approach more aligned with what is recommended in the new guidelines.
* New NICE guidelines recommends SABA free pathways to reduce risk of SABA overuse. These are for both anti-inflammatory reliver (AIR) and maintenance and reliver therapy (MART) which use a combination of ICS/formoterol.
  + A blue and white diagram with white text

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* Gain an understanding of which areas (ICS/or smaller) are currently best at using the “ideal” treatment pathway. With the new guidelines using AIR, and MART same inhaler will be used but different number of times:
  + So in old pathway you would either be given a SABA inhaler only, or a SABA and a ICS inhaler
    - I imagine as SABA inhaler only has been acknowledge as being a bad idea for many years there is generally going to be policies in place to also ensure patients have had a ICS inhaler. (OpenPrescribing dashboard already aims to look at this I believe: <https://openprescribing.net/measure/saba/>)
  + Which areas are prescribing ICS/formoterol inhalers for AIR and MART at the moment which is the “Ideal” pathway
    - * A screenshot of a medical chart

        AI-generated content may be incorrect.
      * Different areas will recommend different types of inhaler for AIR/MART think in this case can look at all of them. This lets you look all inhaler licenced:
        + https://www.rightbreathe.com/?s=&device\_type=&drug\_class=ICS+%2B+LABA&drug\_name=&device\_type=&adult\_asthma\_licence=1
* Then can combine with QOF framework outcomes from Fingertips to look at differences in:
  + Asthma Prevalence – use to estimate asthma population and calculate rate
  + Hospital admissions for asthma (19+)
  + Mortality rate from asthma (1 or 3 year range)
  + Patients with Asthma review withing last 12 months
  + Percentage of patients on the QOF Asthma Register who received six or more Short Acting Beta-2 Agonist (SABA) inhaler prescriptions over the previous 12 months. – (never used this)
* Variation in prescribing and outcomes by deprivation
* Variation in greenhouse gas emissions by areas following the more recommended pathway (new recommended includes only one inhaler rather than two, as well as focusing on dry powder inhaler which have a low CF)

https://rightdecisions.scot.nhs.uk/dgrefhelp-nhs-dumfries-galloway/respiratory/asthma-treatment-for-age-12-and-over/#:~:text=PRN%20only%20dosage%20of%20ICS,for%20AIR%20from%20age%2012).

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<https://cks.nice.org.uk/topics/asthma/prescribing-information/ics-ics-laba-combination-inhalers/>

https://www.rightbreathe.com/?s=&device\_type=&drug\_class=ICS+%2B+LABA&drug\_name=&device\_type=&adult\_asthma\_licence=1

**https://digital.nhs.uk/data-and-information/publications/statistical/mi-network-contract-des**