Improving asthma outcomes by following guideline directed care with the SENTINEL Plus programme in the Armagh/Dungannon Federation[1]

Cleary D_1, Hughes B_1, McCann K_1, O'Reilly-Smyth A_2, Stevenson N_2

Armagh and Dungannon GP Federation[1]. AstraZeneca, Medical and Scientific Affairs, Biopharmaceuticals Medical, London, United Kingdom[2]

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Introduction

In 2023, the respiratory index data from Asthma and Lung UK ranked Armagh Banbridge Craigavon council area as 208 of 217 in terms of highest respiratory rate of deaths and emergency admissions[2]. Short Acting Beta Agonist (SABA) monotherapy over reliance continues to negatively impact asthma patients and the environment. To address this, the Armagh/Dungannon GP Federation worked collaboratively with AstraZeneca utilising SENTINEL plus, a co-designed quality improvement package, in conjunction with Interface Clinical Services to improve asthma patient outcomes.

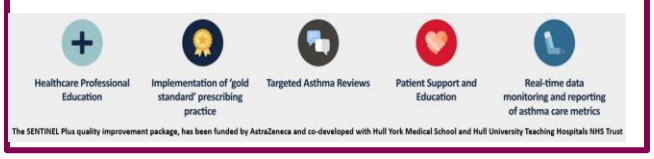
Aim

Improve asthma patient outcomes by identifying SABA overuse, holistically reviewing asthma patients and commencing guideline directed Maintenance and Reliever Therapy (MART) in appropriate patients.

Figure 1 Routinely collected NHS data was obtained in 16 of 22 GP Practices within the Armagh/Dungannon Federation, Northern Ireland

What is SENTINEL Plus?

SENTINEL Plus is a quality improvement framework that aims to improve outcomes for asthma patients and reduce the environmental impact of asthma treatment by identifying and addressing SABA over-use. SENTINEL Plus utilises a co-designed intervention, developed during the SENTINEL Project.[1]



Methods

From June 2024 to March 2025 Interface Clinical Services analysed routinely collected NHS data, formed a baseline report and conducted targeted asthma reviews aligned with SENTINEL Plus in 16 GP practices within the Armagh and Dungannon Federation. This was coupled with asthma management educational sessions and access to the SENTINEL Plus website resource being made available to all clinicians within the federation.

Table 1 Baseline characteristics of asthma patients
Describes baseline characteristics of registered asthma patients in 16 practices.

Baseline characteristics of registered asthma patients (N=6,167)	N (%)
Had an asthma review in past 12 months	3,324 (54.0)
Assessment of inhaler technique in past 12 months	2,648 (43.0)
≤3 SABA prescribed in past 12 months	3,571 (42.0)
≥3 SABA prescribed in past 12 months	2,596 (42.1)

Figure 2 Participating practice characteristics and record of oral corticosteroid issues, asthma attack episodes and hospital admissions due to asthma

Results

Total of 920 patient reviews were undertaken. Of these reviewed patients:

- 660 (72%) patients had their short acting bronchodilator SABA or short acting muscarinic antagonist (SAMA) stopped (Figure 3)
- 740 (80%) patients commenced on MART (668 new initiations). (Figure 3)
- 919 of reviewed patients (99%) received advice on worsening asthma control and provision of a personalised asthma action plan
- 56 out of 107 (52%) patients who smoke expressed wanting to stop smoking and were signposted/referred for smoking cessation service.
- 917 (99%) patients had their inhaler checked (Table 2)
- Other prescribing changes are displayed in Figure 4.

Table 2 Inhaler assessment technique findings

Had assessment of inhaler technique during the review (N=917)	N (%)
Assessed as having 'poor' inhaler technique	101 (11)
Assessed as being poorly compliant with current therapies used in the management of asthma	331 (36)

Conclusions

The Joint working between the Armagh Dungannon GP Federation and AstraZeneca resulted in improved asthma guideline directed care with SABA only reliever therapy prescribing being reduced and MART uptake increased in appropriate patients. An approach, which in November 2024, was consolidated with the update of BTS, NICE, SIGN[3] joint asthma guideline. Education along with the creation of a collaborative framework has facilitated an interdisciplinary approach towards enhanced asthma care.

Figure 3 MART and SABA/SAMA prescribing changes before and after SENTINEL PLUS patient review

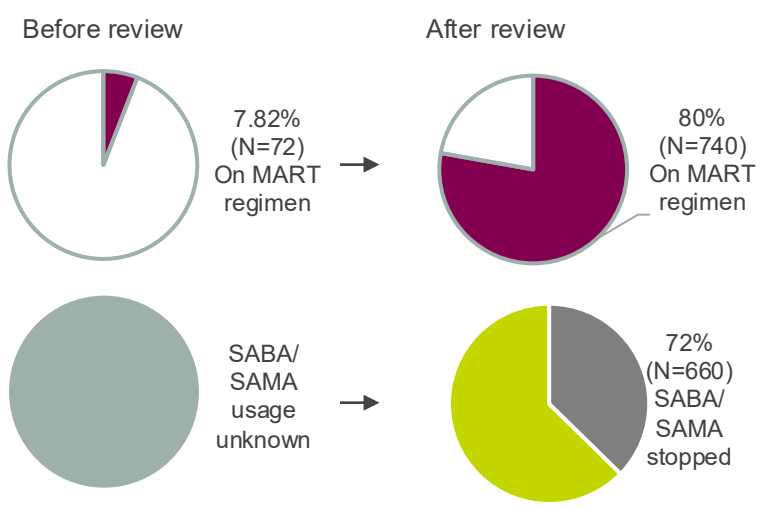
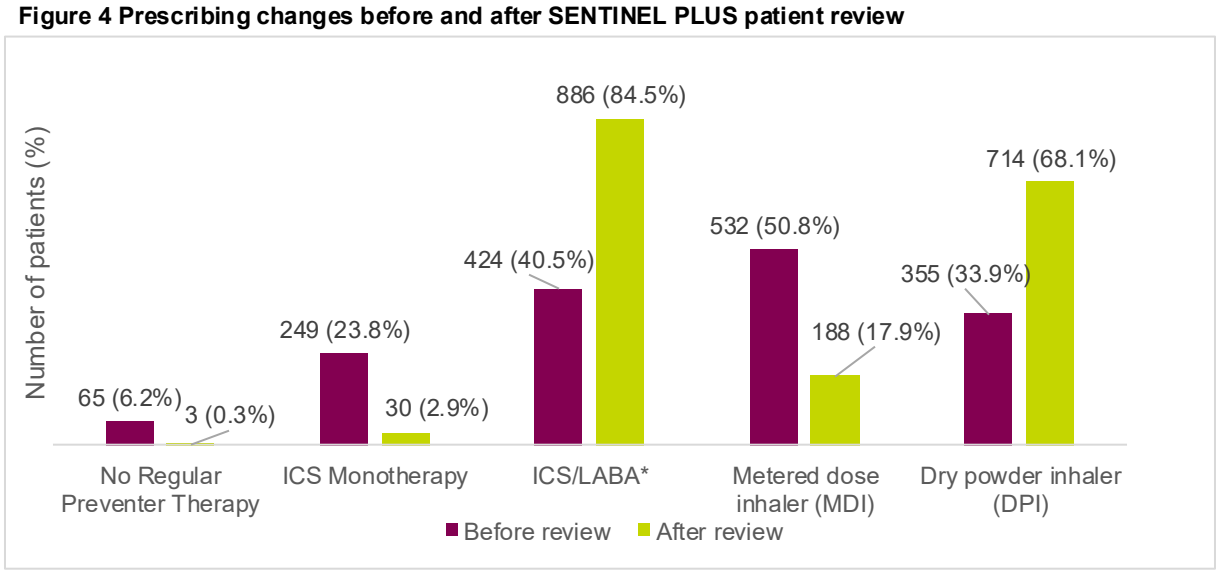


Figure 4 Prescribing changes before and after SENTINEL PLUS patient review



* The ICS/LABA figure includes not only ICS/LABA but also add-on therapies

References

1. Crowther L, Pearson M, Cummings H, Crooks MG. Towards codesign in respiratory care: development of an implementation-ready intervention to improve guideline-adherent adult asthma care across primary and secondary care settings (The SENTINEL Project). BMJ Open Respiratory Research. 2022 Feb 1;9(1):e001155.
2. Asthma & Lung UK- Respiratory Index. https://public.tableau.com/app/profile/asthmaandlunguk/viz/Respiratoryindexvisualisations/Respiratoryindex Accessed April 2025
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