

Evaluating FeNO testing in primary care to support diagnosis and appropriate prescribing in a PCN in South Yorkshire

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1 BACKGROUND

Addressing inequities in asthma diagnosis and management is a key health priority. Asthma is underdiagnosed in approximately 50% of cases¹, with missed or delayed diagnosis leading to suboptimal treatment, poorer quality of life, avoidable exacerbations, increased hospital admissions, and preventable mortality. The burden of respiratory disease is disproportionately higher in deprived communities, where both incidence and mortality are elevated², and approximately 70% of individuals experience uncontrolled asthma symptoms³. The impact of asthma is also high in children.

29%
Of asthma related hospital admissions across England are in children aged ≤15 years⁵

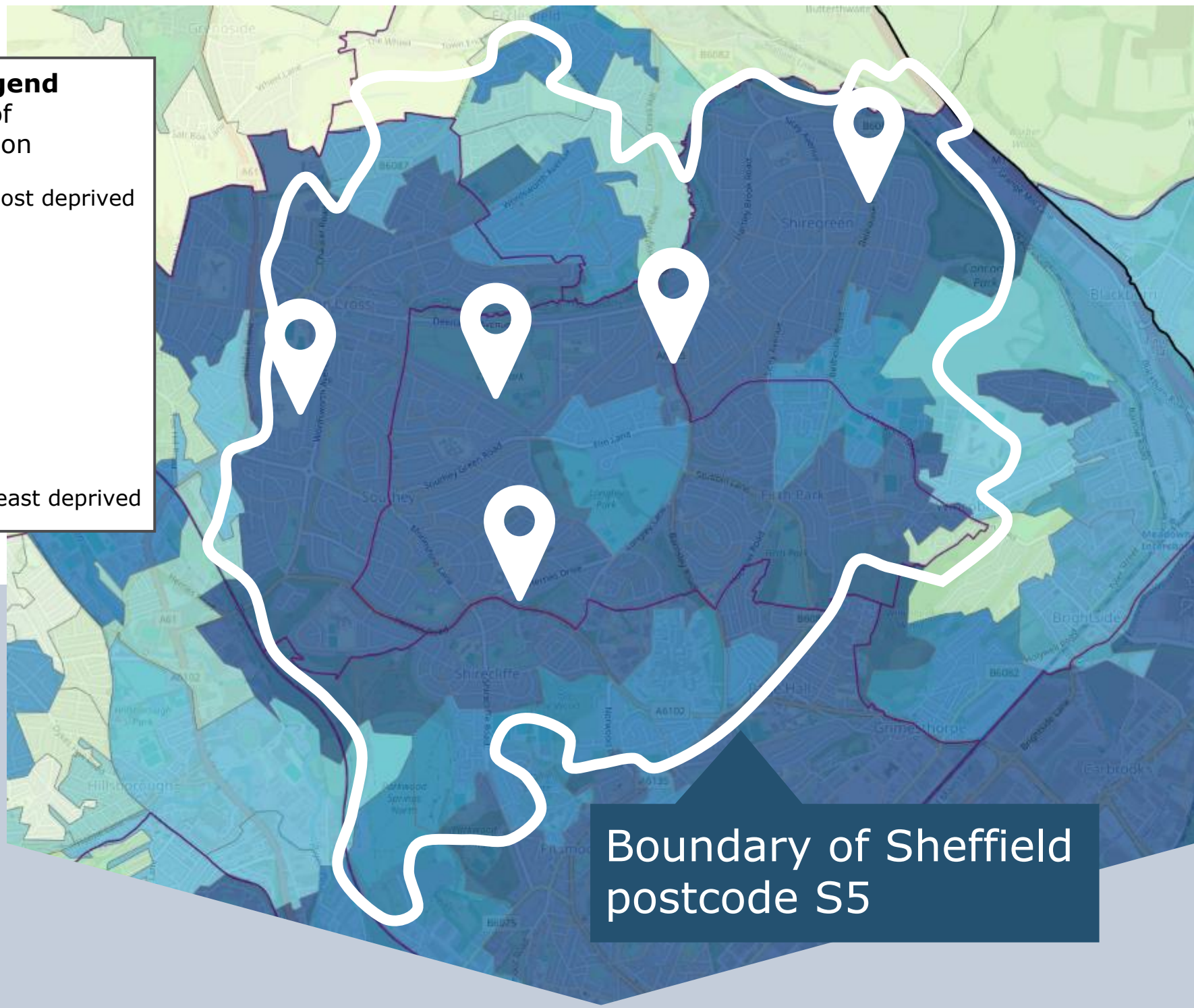
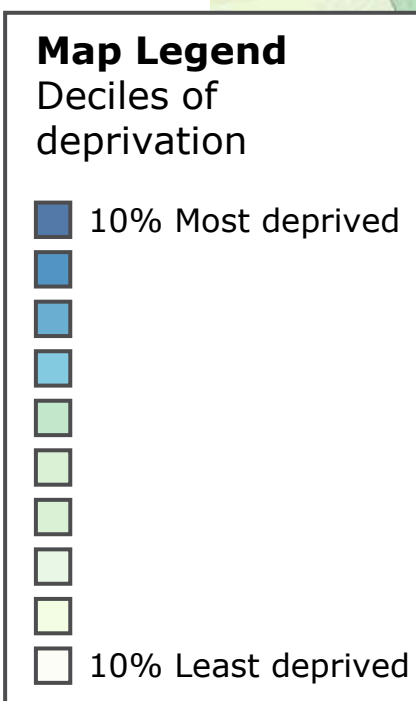
2 AIM

To address these challenges, a cross-system partnership between Health Innovation Yorkshire & Humber, SAPA 5 Primary Care Network (PCN), Sheffield Children's Hospital, and South Yorkshire ICB established a community-based asthma clinic to improve access to diagnostics and community GP based asthma care.

3 METHODS

SAPA 5 PCN, serving approximately 38,500 patients, was selected due to high deprivation, with all 5 participating practices in the most deprived national decile⁴. Fractional exhaled nitric oxide (FeNO) testing, a NICE-recommended diagnostic tool, was embedded into routine care. Data was collected retrospectively from patient records over 12 months, including medication use before and after testing and referral activity to secondary care.

The GP practices involved in this evaluation were part of SAPA 5 PCN, serving the Sheffield S5 postcode area, and are all located within the most deprived decile.
Data from English indices of deprivation 2019: mapping resources

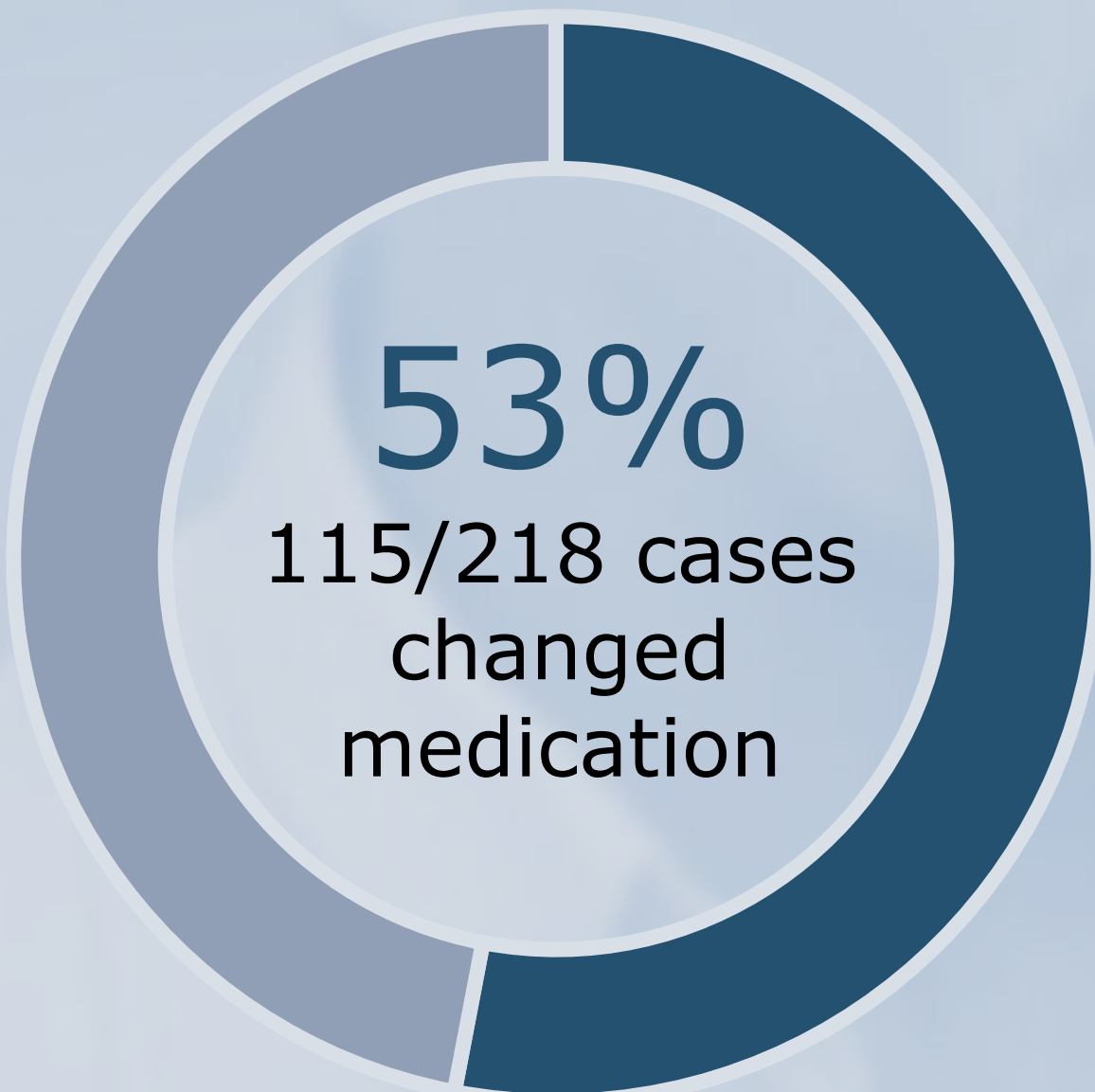


4 RESULTS

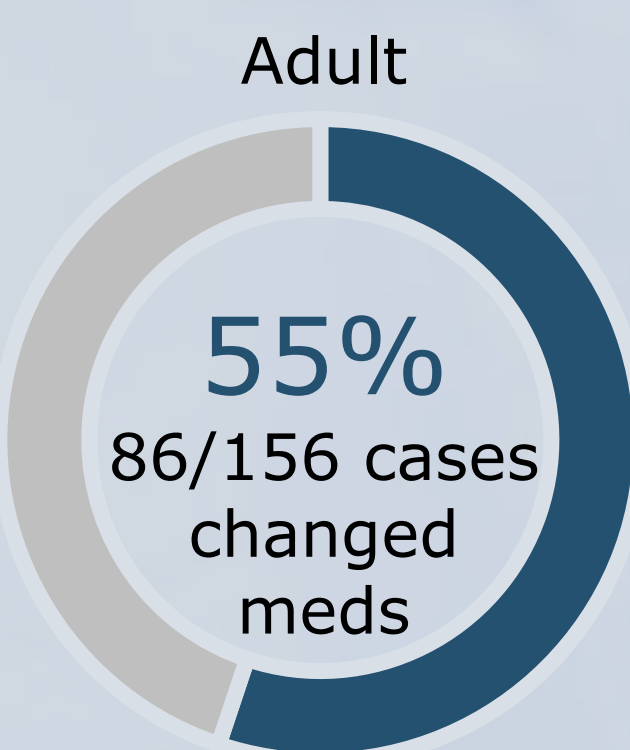
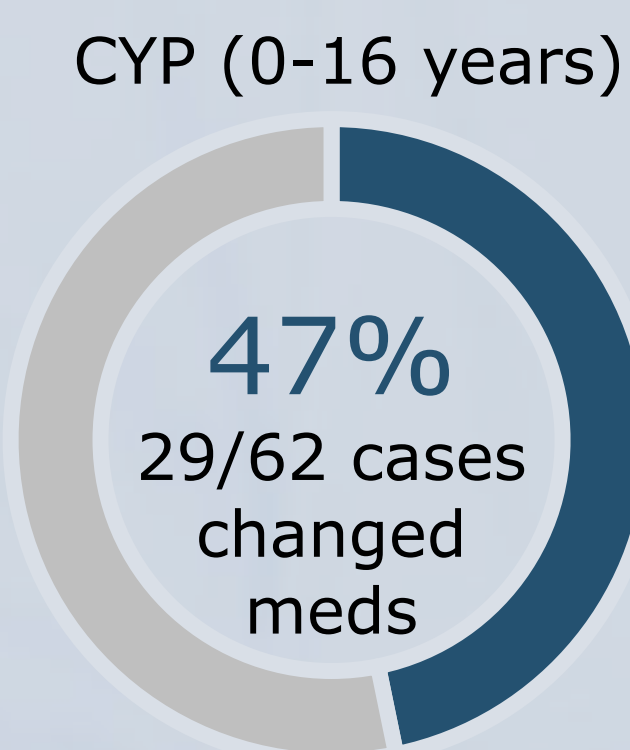
A total of 218 patients received FeNO tests that included 62 children and young people aged 0-16 years and 156 adults.

Change in medication

Following a FeNO test and clinical assessment, 53% (115/218) of all patients had a change in medication.

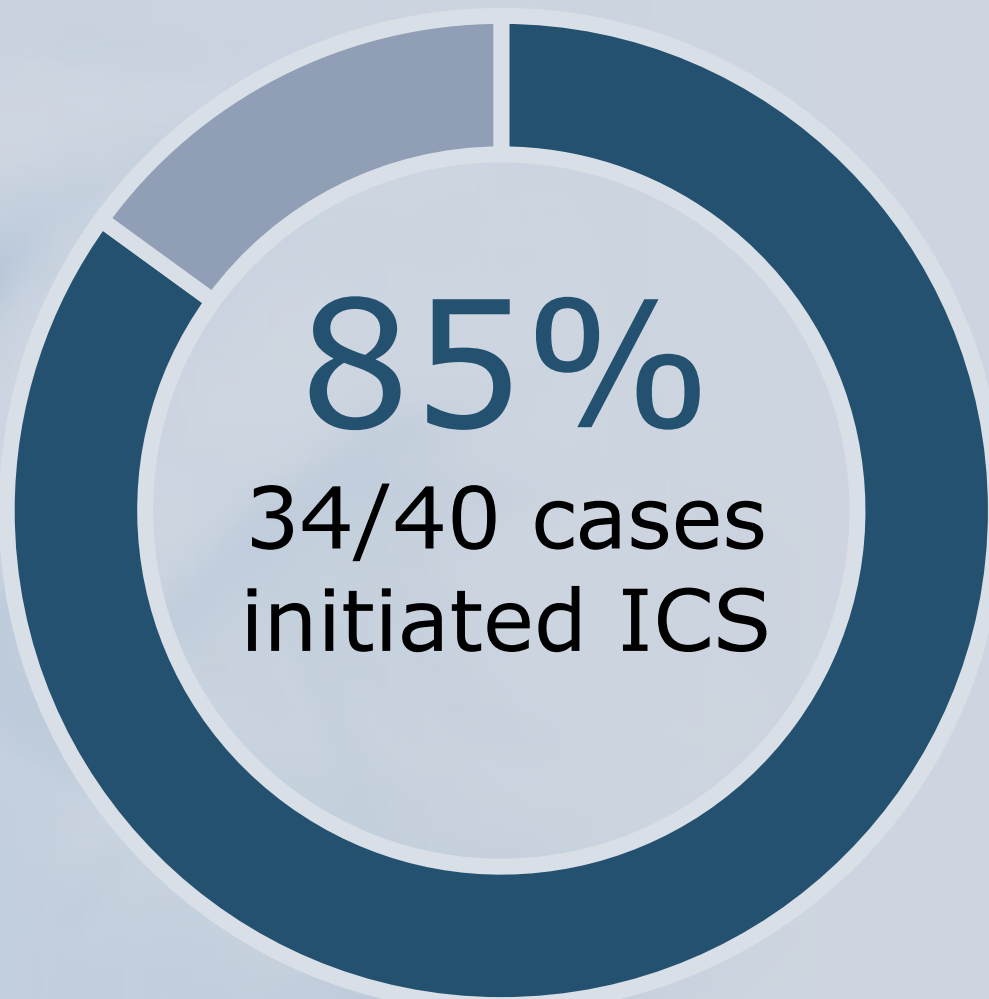


Change in medication by age group

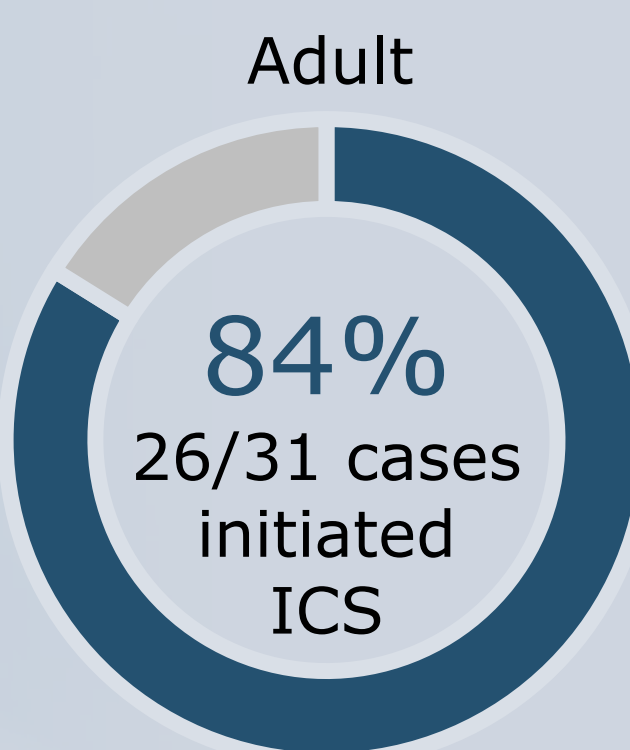
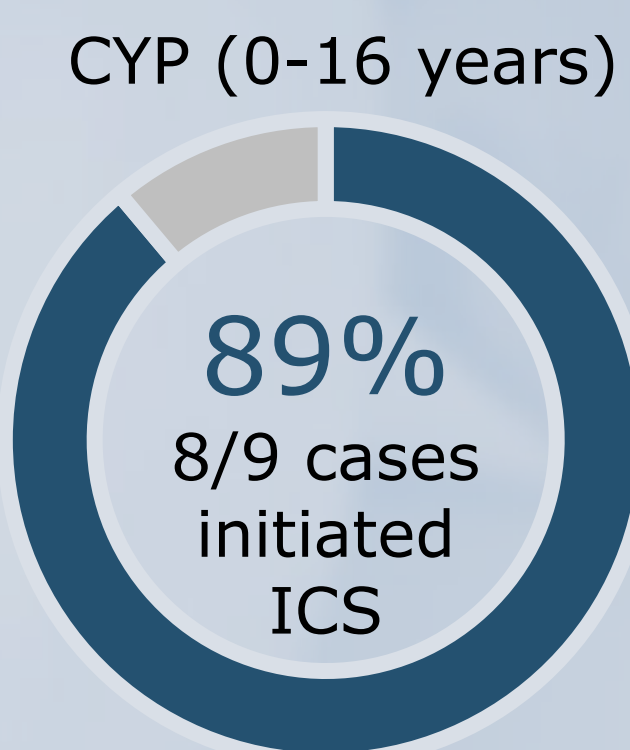


Appropriate initiation of ICS therapy

Of 40 patients not on definitive Asthma treatment (no treatment or SABA only) and with FENO≥35, a total of 85% (34/40) commenced treatment with inhaled corticosteroids (ICS). Non-initiation was primarily due to non-attendance at follow-up.



Initiation of ICS by age group



Reduced referrals

53%
Fewer referrals to secondary care

Referrals to paediatric respiratory services decreased by 53% compared to the previous year.

Supporting carbon reduction

Prescribing, and particularly inhaler prescribing, represents one of the largest contributors to the environmental impact of general practice. The inhaler switches implemented through this initiative supported the use of lower carbon footprint devices, helping to significantly reduce the environmental impact of respiratory care.

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5 CONCLUSION

Embedding FeNO testing within General Practice improved diagnostic accuracy and supported evidence-based treatment in a high-need population. The intervention facilitated appropriate initiation of ICS therapy, reducing reliance on SABA-only treatment and aligning with BTS/NICE/SIGN guidance. This model supports General Practice based health promotion and illness prevention, and demonstrates potential to improve health outcomes and reduce health inequalities at scale.