



Background



Children from underserved communities experience greater barriers to asthma diagnosis and effective management. Conventional respiratory pathways may miss children facing language, transport, socioeconomic or engagement barriers.

We developed a pharmacist-led neighbourhood respiratory service to bring assessment, diagnosis and treatment closer to families.

Adapted from the nationally recognised Dudley One-Stop Respiratory Clinic model to meet the needs of children, young people and their families.

Equity by Design

- ✓ **Proactive reach** – identified high-risk children in communities of high deprivation.
- ✓ **Care closer to home** – reduced practical barriers to accessing specialist respiratory care.
- ✓ **Personalised, culturally responsive care** – longer consultations built trust and explored cultural, religious and health beliefs.
- ✓ **Language-inclusive care** – multilingual support and Written Medicine enabled medication information in families’ first language, supporting safer care.
- ✓ **Equity-focused patient safety** – plain language, visual aids and teach-back supported safer self-management and inhaler use.
- ✓ **Wider determinants** – social prescribing supported families affected by damp, mould and fuel poverty.

How We Reached The Children

Tailored searches helped identify high-risk children suspected of asthma who were invited to the clinic. These included children who:

- ✓ Were prescribed inhalers without a confirmed diagnosis
- ✓ Were prescribed 2 or more courses of oral corticosteroids
- ✓ Had a history of urgent unscheduled respiratory-related appointments in the past 5 years
- ✓ Were referred by GP practices because they were considered high risk or with an uncertain diagnosis.

Structured asthma assessments were undertaken according to BTS/NICE/SIGN asthma guidelines.

Urgent GP appointments

- 70% had ≥1 urgent appointment
- Highest recorded: **14 urgent appointments**

Exacerbation Burden

- 28% had ≥1 OCS course
- Highest recorded: **7 OCS courses**

A&E Attendance/Admission

- 37% had ≥1 episode
- Highest recorded burden: **6 episodes**

High Reliever issue

- 19% were prescribed ≥4 inhalers/year
- Highest recorded issue: **22 inhalers/year**

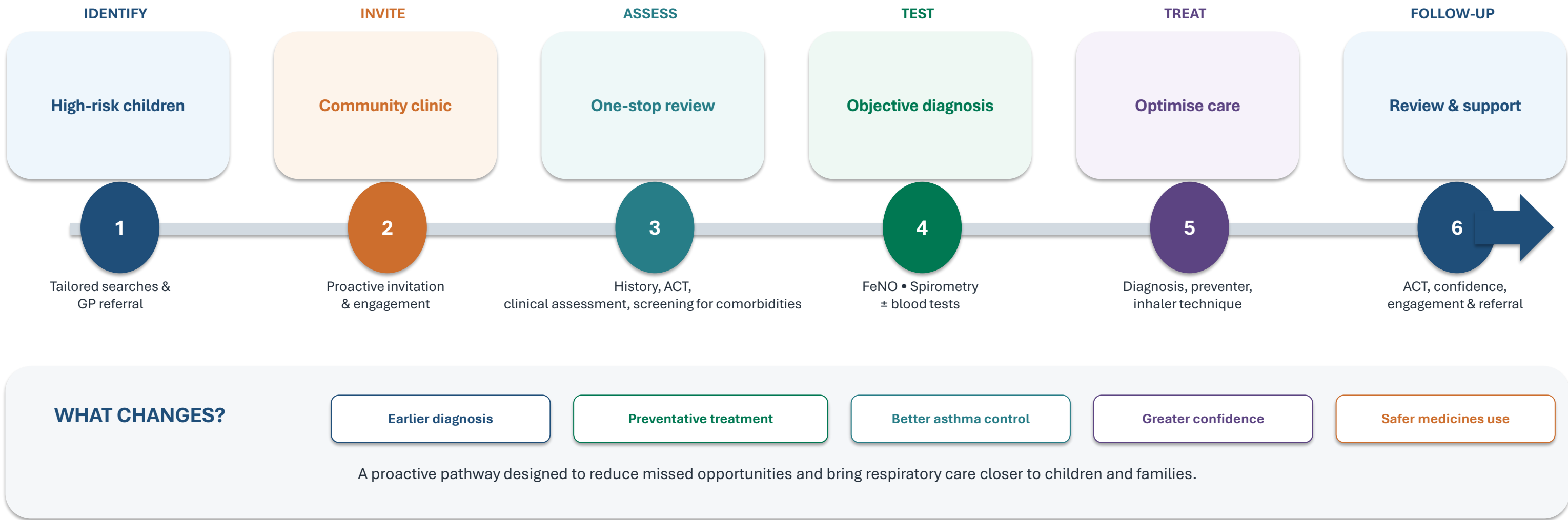
Baseline Treatment without a confirmed diagnosis

- Receiving no respiratory treatment 10%
- Salbutamol only treatment 60%
- Inhaled corticosteroid therapy 30%.

Acknowledgments: We thank participating children, families, GP practices, community partners, Written Medicine and the Birmingham Children’s Hospital Respiratory Team for their support and collaboration in developing the service standard operating procedure and training of the pharmacists.

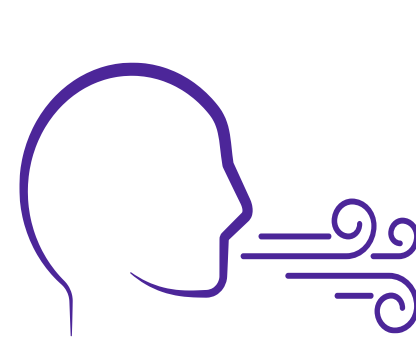


New Children & Young People’s Asthma Pathway

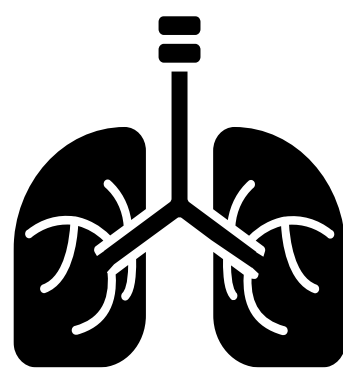


We didn’t wait for high-risk children to reach the service we designed the service to reach them.

Diagnostic Impact



37
FeNO supported diagnosis in 37 children.

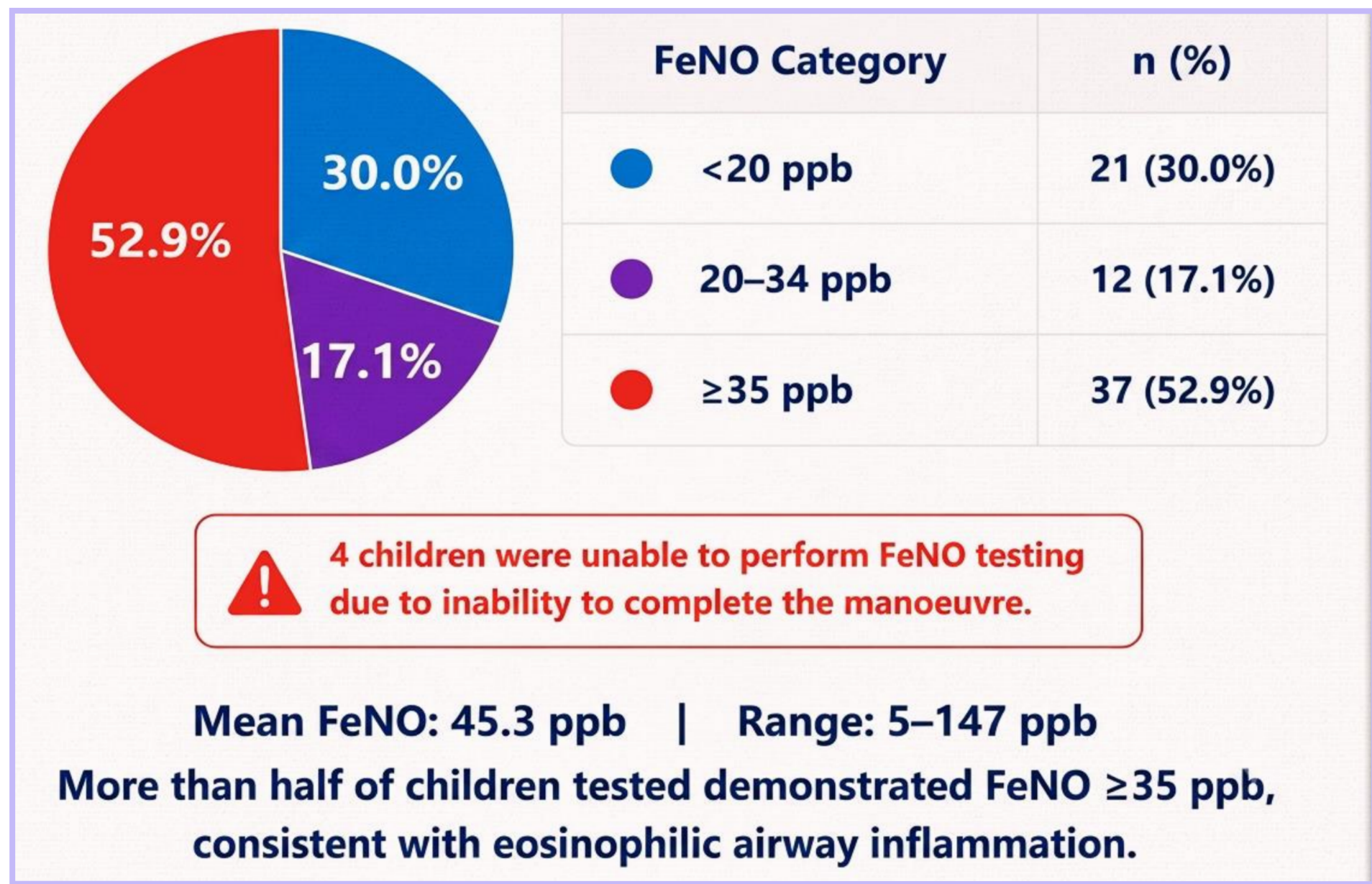


22
Spirometry supported diagnosis in 22 children.

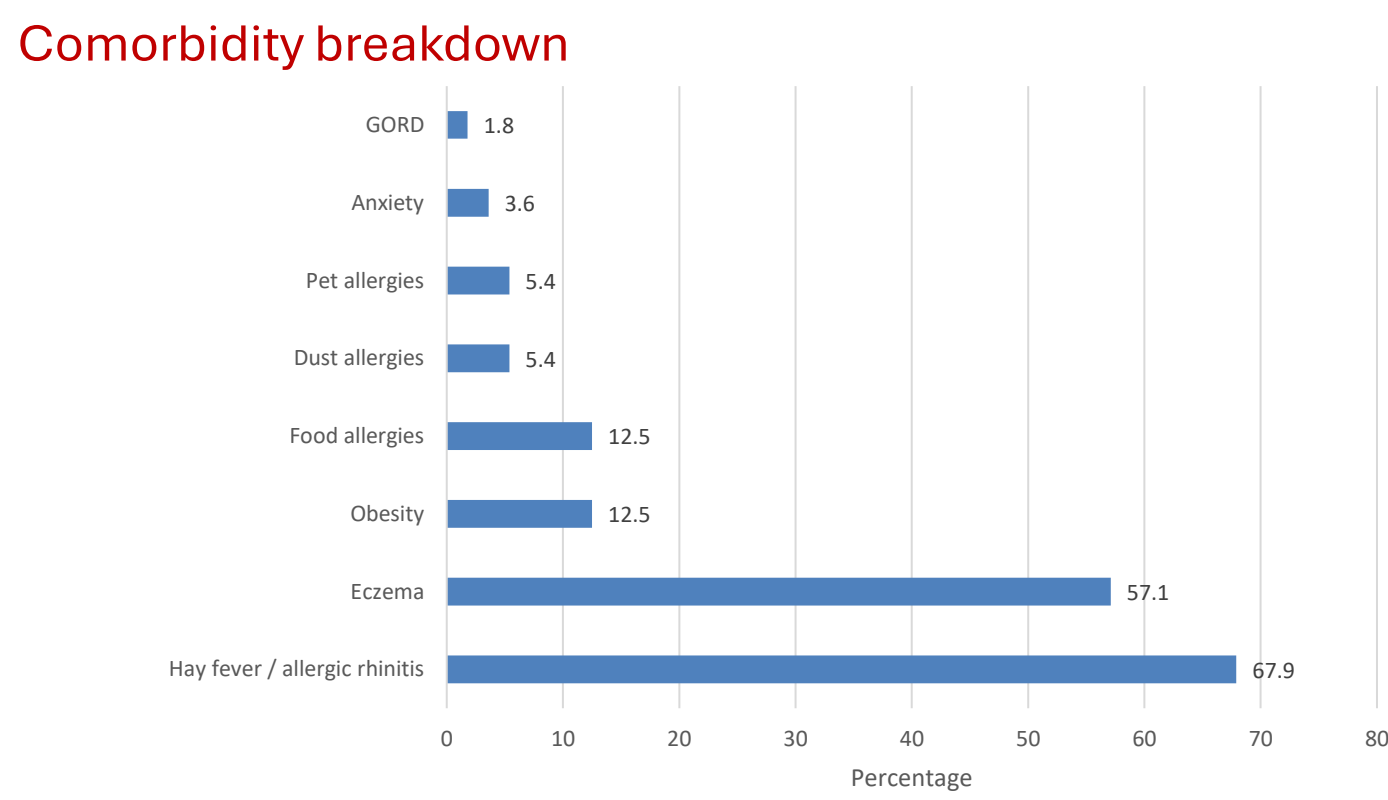


4
Blood eosinophil count and IgE supported diagnosis in 4 children.

Several children had multiple positive objective tests; therefore, objective testing categories are not mutually exclusive.



Comorbidities Identified



57 of 74 children (77.0%) had at least one comorbidity identified
77% of children had treatment prescribed for their comorbidities

Testimonial

“We want to sincerely thank you for the incredible care you gave our daughter.

For years, she was frequently hospitalised with "virus-induced asthma," but no one properly investigated her condition. Over the last 12 months she was hospitalised twice and missed many days of school due to her symptoms.

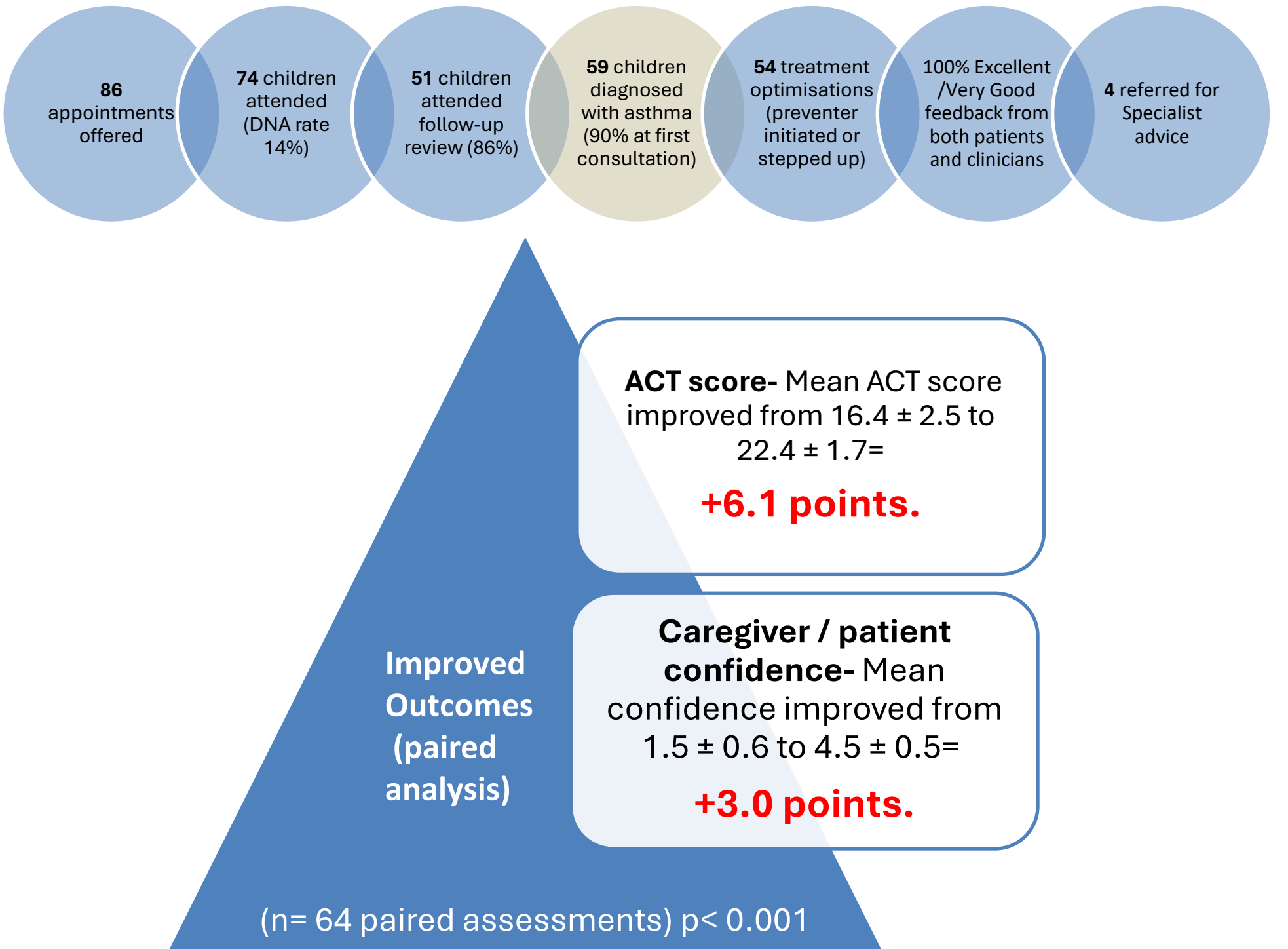
By chance, my sister mentioned her situation during her appointment with you, and you kindly agreed to see our daughter the same day. Within an hour, you identified severe airway inflammation with diagnostic tests and promptly prescribed her a preventer inhaler.

Since starting treatment, her life has changed completely, no more panic, chest pain, or sleepless nights. She can now enjoy school and childhood again, thanks to you.

Your expertise, kindness, and prompt action made all the difference. We are truly grateful.”

Service Data

Retrospective service evaluation.
Period - January 2025 – June 2025.
74 children aged 6–16 years (median age 11 years, IQR 9–12).



Safer Asthma Care

Medicines safety

Identified SABA over-reliance, suboptimal preventer use, adherence barriers and opportunities to optimise treatment.

Inhaler safety

Assessed device selection and inhaler technique; errors were corrected and device choice personalised to the child.

Allergy & anaphylaxis

Three children with confirmed anaphylaxis were prescribed adrenaline auto-injectors following review, including replacement of expired devices, weight-appropriate dose optimisation and reinforcement of emergency action plans.

Environmental risk

Identified exposure to damp, mould and second-hand smoke. Six family members were referred to Stop Smoking Services to support smoke-free homes, with appropriate referrals for damp and mould concerns.

Safer self-management

Used plain-language education, visual aids and teach-back to strengthen understanding of treatment and asthma attack management. Social and financial needs were identified and appropriately signposted.

Conclusion

Little Lungs demonstrates the potential of proactive, personalised neighbourhood respiratory care to address inequalities in access, experience and outcomes, while building respiratory capability across primary care. This model may offer a scalable approach to earlier identification and management of childhood asthma.

Next Steps

Evaluate: Longitudinal outcomes including admissions, unscheduled care and SABA use. Early 6-month data show promising reductions in unscheduled care and SABA use.
Scale: Implementation toolkit to support wider adoption and local adaptation.