



Leading the Spread and Adoption of Innovation and Improvement: Insights through the national Fractional exhaled Nitric Oxide (FeNO) testing programme

How to achieve widespread adoption and spread of innovation in healthcare has been long debated. The field of Implementation Science is large, growing and has an increasing focus on enabling healthcare to improve outcomes, quality and cost effectiveness, yet numerous examples describe how the NHS is slow to adopt innovation.

You can watch a short recorded discussion exploring this case study [here](#).



NHS England and NHS Improvement (NHSEI) has recently developed [a new Practical Guide to support adoption](#). It has a new mindset at its core to support the adoption of innovation in the NHS, built around seven interconnected principles. The model has been designed to support all levels of adoption – local, regional, national, and in settings where the spread and adoption of complex change is needed.

This case study describes the approach [Wessex Academic Health Science Network \(Wessex AHSN\) has taken to supporting large scale adoption of FeNO testing across England](#) through the lens of the Practical Guide. The national FeNO programme is part of the [NHSEI Accelerated Access Collaborative \(AAC\) Rapid Uptake Programme](#) and has been active since April 2021.

FeNO tests measure the level of Nitric Oxide in an exhaled breath providing an indication of inflammation in the airway. Alongside a detailed clinical history and other tests, FeNO is used to support the diagnosis and management of asthma. Historically, FeNO has been widely used in secondary and tertiary care, yet there is limited adoption in primary care, presenting a large-scale adoption opportunity for the NHS to improve asthma management in primary care, and contributing to the respiratory goals outlined in the NHS Long Term Plan.





The role of Academic Health Science Networks in driving adoption

Wessex AHSN is one of 15 Academic Health Science Networks in England, commissioned by NHS England to support the systematic adoption of (proven) innovation. Wessex AHSN leads the national FeNO programme, working with the AHSN Network to enable the wide-spread adoption of FeNO testing in primary care.

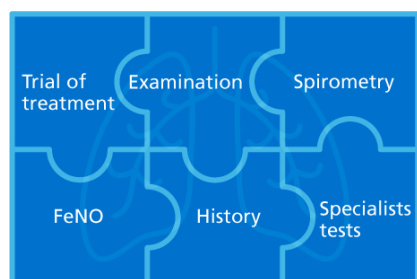
Our approach to delivering the FeNO programme is described in the NHSEI Practical Guide. This case study describes our approach and provides real world examples from our experience of FeNO delivery.



Principle 1: Complexity

The model describes how complexity can exist in the innovation, the context, and the approach taken to spread and adoption.

A FeNO test is simple – it takes around 10 seconds to complete, and the result is shown on screen around 60 seconds later. Devices undertake their own quality control and do not provide a reading if a failed test has been undertaken. The value of FeNO comes from the integration of the test result into the complex asthma pathway and the value of the “So what?” question that a FeNO test result generates as part of the asthma diagnostic jigsaw – for example, are we making the right diagnosis, what is the best treatment approach? To address this complexity, the programme has always focused on the overall pathway of care and the required pathway change with FeNO integration, rather than solely focusing on the technology.



The primary care setting is most certainly complex, with **6,822 GP practices**, around **1,250 emerging Primary Care Networks**, many professional societies (and respiratory specific societies), NHS England and NICE to name just some of the stakeholders in care delivery. The FeNO programme aimed to gather and understand the views of as many stakeholders as possible during the programme scoping and set up phase to assess context complexity, compounded by the programme commencing during the early stages of the Covid-19 pandemic.

Deep dive – policy context

The policy context when the FeNO programme began was (and remains) complex: the NHS Long Term Plan was around a year old, Professor Sir Mike Richard’s Diagnostics: Recovery and Renewal report had been published, the NHS England national respiratory programme was describing a new direction on the back of the Long Term Plan, and Respiratory Clinical Networks were forming. In the years preceding 2020, NICE and the British Thoracic Society (BTS)/the Scottish Intercollegiate Guidelines Network (SIGN) had differing views on the role of FeNO testing but had agreed to develop collaborative clinical guidance, expected in summer 2023. The FeNO programme needed to navigate all these concurrent conversations and interactions and assess the complexity, while effectively building the case for FeNO use at scale, masterminding the programme plan, and simultaneously delivering that plan for maximum effect.



Principle 2: Leadership

Wessex AHSN has taken a devolved enabling leadership style to the programme, facilitating all AHSNs to work to a collective national ambition, yet supporting the implementation of FeNO testing in their local geography in their own way. We've been descriptive not prescriptive in our leadership approach.

We have built a collective ambition around a set of simple programme priorities and goals. We've seen engagement and ambition at all scales; from individual GP practices all the way through to Integrated Care Systems that have used the resources generated by the FeNO programme to implement FeNO in the best way for their local population.



Principle 3: The Individual

At the core of the programme team are two fantastic public partners who advocate FeNO in very practical terms.

Living with severe asthma, they hold the programme to account and retain its patient focus making it clear what FeNO means to them and how it has positively impacted their lives. Our public partners continue to support the programme and join national events where their lived experience is regularly cited as the most powerful and motivating feature of the workshops. They are invaluable in keeping us sighted on the real world application and impact of this programme.



Principles 4 and 5: Benefit and Adopter Focus

Fundamental to our approach when spreading FeNO testing has been our focus on the adopters.

Almost all the materials which comprise the FeNO implementation toolkit are designed for the adopters and are freely available to access; the FeNO toolkit has received 7,837 views in the 10 months since launch which is testament to its value. Many of the resources are editable to allow local FeNO champions and implementation leads to adapt and use them for specific local application.

A range of people are involved in the adoption of FeNO. We have extended the focus on adopters, with adoption materials supporting operational, clinical and managerial colleagues as well as directly describing the patient benefits with resources such as patient information leaflets, explanatory videos and pre-appointment guidance messages.





Focus on: FeNO implementation toolkit

The FeNO implementation toolkit has three main components:

- **information on the products**
- **clinical resources (such as pathways, standard operating procedures, infection control guides and patient leaflets)**
- **wider change management materials (such as project plans, training modules and case studies).**

The toolkit has been designed in a very practical way to support clinical and operational teams adopting and sustaining the use of FeNO testing as part of their delivery of asthma care. For example, we have created an accuRx message to help patients prepare for their FeNO test – this is accessible nationally.



Principle 6: Networks

At a national level, the connected network of AHSNs across England is core to the way we support the adoption and spread of innovation; harnessing collective power to accelerate the pace of adoption, support sustained use and improve health outcomes.

Through quarterly FeNO Learning Collaboratives, the FeNO programme has successfully connected people using FeNO, implementing FeNO and considering FeNO testing. To date, over 600 people have attended with delegates joining from as far afield as Canada and Australia.

Wessex AHSN leads and coordinates these events, but the agendas focus on the adopters and the individuals joining the collaborative to encourage them to share experiences and learning, network with other users, and generate traction and enthusiasm.

Principle 7: Learning

Adopting innovation is hard, and adaptation and learning are fundamental to its success. From the outset, the FeNO programme has embedded learning across three levels:

- our national Learning Collaboratives which support people who use FeNO
- the AHSN Network community of practice which supports AHSNs directly linked with the implementation teams on the ground, and
- the National Programme Group chaired by Wessex AHSN, which takes a national overview of the programme, its goals and successes.





Learning is shared across these groups and more widely with the FeNO programme's sister programme to improve access to biological therapies for severe asthma. This relationship has proved hugely beneficial as both programmes learn from each other to further improve.

At implementation level, it's important that teams adopting FeNO test and revise their approach to asthma care, reflect on their approaches, iterate and adapt. Our implementation toolkit includes resources to enable team reflection and continuous improvement through a dedicated action learning set resource.

The future of FeNO testing

The FeNO programme is gathering pace with a rapidly growing number of users across England.

Those embracing FeNO testing are revamping asthma pathways, making FeNO business as usual and using FeNO testing to remove the guesswork associated with asthma diagnosis. They are 'thinking FeNO' early: this has never been done before in primary care and is supporting the national focus on earlier and faster diagnosis.

Supported by their local AHSN team, clinical teams are already using the principles described by the NHSEI spread model to adopt FeNO testing in their practice. We have attempted to describe how the seven principles have been used as part of this programme in isolation; however, the reality is - as NHSEI describe - a set of 'seven interconnected principles' and we have certainly experienced the interconnected aspects of the principles in our programme approach.

The national FeNO programme has developed a suite of resources, including two training modules with free open access. It also runs quarterly FeNO collaboratives at which all are welcome. Join the next by booking here.

► [Click here for our FeNO resources](#)

► [Click to book out next FeNO Learning Collaboratives session](#)

Want to find out more?

🐦 @WessexAHSN
wessexahsn.org.uk
enquiries@wessexahsn.net

