



# Adopting ADHD technology across the NHS helps tackle waiting list challenge

Case studies

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# Overview

**Organisation:** Health Innovation East Midlands

**Organisation type:** NHS (regional innovation organisation)

Attention deficit hyperactivity disorder (ADHD) is a developmental disorder that affects around 1 in 20 school-aged children worldwide. If undiagnosed or untreated it can significantly affect personal development, academic outcomes, and family interaction.

Timely detection and treatment are likely to moderate risks and improve outcomes, but in the NHS there was no simple test to determine whether a child had ADHD.

Despite evidence-based national guidelines, the diagnostic process can include multiple steps based on clinical judgement and informed by subjective reports from parents, teachers, and observation of the child.

As a result, across the NHS many children seeking diagnosis and treatment for ADHD face long waiting times – with some people across the UK waiting for up to 5 years – along with patchy or unavailable services.

# Reviewing current services and implementation

## Reviewing current services

QbTest is the only NICE-approved technology that supports faster diagnosis of ADHD for children and young people.

Developed by the company Qbtech, the technology measures all 3 core ADHD symptoms: activity, attention and impulsivity, and it involves a 15- to 20-minute computer-based test. The results are instantly generated, and the data is compared with a normative control group of people the same sex and age who do not have ADHD.

Via the 15 local health innovation networks, the technology has rapidly spread throughout the NHS across England from April 2020.

The technology first came to the attention of the health innovation networks via the network for the East Midlands: Health Innovation East Midlands (HIEM).

HIEM had picked up on a 2013 randomised control trial (funded by the National Institute for Health and Care Research Applied Research Collaboration [NIHR ARC] East Midlands and done by the NIHR MindTech HealthTech Research Centre) focusing on a new, innovative digital technology called QbTest.

This NIHR research indicated that, when used alongside clinical assessment, the technology showed potential to reduce the time to diagnosis (ruling ADHD in or out) for children and young people.

## Implementation

Based on the promising results of the NIHR study, in 2017 HIEM launched a series of pilot projects in real-world settings – 3 East Midlands NHS mental health trusts.

These pilots provided a strong evidence base to suggest that QbTest, when used alongside clinical judgement, could significantly reduce the time to diagnosis; not only

transforming patient outcomes, but also freeing up precious clinical time and saving NHS resources.

Based on the success of the East Midlands pilot sites, NHS England commissioned the 15 local health innovation networks to rapidly scale the innovation nationally.

Rollout started in April 2020, focusing on the coordinated, national implementation of QbTest in NHS mental health trusts and paediatric services.

This timing coincided with the start of the COVID-19 pandemic, presenting a significant challenge given that the healthcare professional and patient need to be in the same clinical setting for the test to be done.

# Outcomes and learning

## Outcomes

National NHS rollout of QbTest started in April 2020 via the network of the 15 local health innovation networks.

Despite the impact of the pandemic, QbTest rollout gained rapid traction throughout NHS trusts and paediatric services: all targets for adoption, set by NHS England pre-pandemic, were exceeded. It has gone on to achieve outstanding positive impacts.

The rapid rollout was enabled by the health innovation networks' twin abilities to operate locally – supporting local NHS clinical teams with adoption – while working in consistent and coordinated ways across England to drive rapid implementation.

This saw the programme go from a standing start to national adoption within 4 years.

In March 2023, NICE published a medtech innovation briefing highlighting the benefits of objective testing technology when used as part of a comprehensive ADHD assessment. And in September 2024, NICE published diagnostics guidance recommending QbTest to support ADHD diagnosis for children and young people. QbTest is the only technology recommended by NICE at the time of writing to support ADHD assessment for children and young people.

The fantastic success of this implementation across England has provided a launchpad for Qbtech, the innovator that developed the QbTest; the company has expanded internationally and in October 2024 achieved the milestone of completing 1 million tests worldwide.

Between April 2020 and March 2024 (the latest available annual data) the following positive outcomes have been achieved across the NHS in England:

- Implemented within 79 NHS trusts – around 3 quarters of all trusts that provide ADHD services for children and young people.
- 71,102 patients benefited.

- Total NHS costs savings estimated at £38.5 million.
- 95,097 hours of healthcare capacity released (clinical appointments and school observations).
- 41,582 clinical appointments saved.
- 2,506 NHS staff trained to use the technology.
- An estimated 375,546 miles of travel avoided by reducing the number of outpatient appointments and school observations – equivalent to travelling to the moon and halfway back.

The initiative has won 4 national awards including 2 Health Service Journal (HSJ) awards:

- HSJ Award 2019 – Innovation in Mental Health.
- National Mental Health and Wellbeing Awards 2022 – Innovative Mental Health Intervention.
- HSJ Partnership Awards 2022 – Best Mental Health Partnership with the NHS.
- 2023 Innovation Spread winner at the national Innovate Awards.

## Learning

National rollout of this technology across the NHS, from a standing start, provided valuable learning relevant to any NHS transformation programme.

It is important to distinguish between innovation implementation, and implementing innovation in ways that maximise the chances it becomes sustained as 'business as usual' – the latter has been achieved with QbTest.

A blueprint document has been produced by the Health Innovation Network (the collaboration of the 15 local health innovation networks) to capture and share this knowledge. The guide identifies the 5 core areas that must be considered for any NHS transformation programme to be successfully implemented and sustained. These are:

- understanding the context
- raising awareness

- building will
- supporting implementation
- changing behaviour.

Other key learnings include:

- Collaboration between research (NIHR) and innovation (health innovation network) partners, and the commercial innovator (Qbtech, inventor of the QbTest) was critical to successful rollout at scale and pace. So this is an outstanding example of 'bench to bedside' adoption of research outputs into innovation implementation.
- The ability of the health innovation networks to build on the initial NIHR research, by rapidly testing and evaluating promising innovations in real-world settings (in the case of QbTest, the 3 East Midlands NHS trusts), was essential. This provided the evidence base needed by other NHS trusts to adopt the technology.
- The ability to draw upon an innovation support infrastructure (via the 15 local health innovation networks) that could operate both nationally and locally: the health innovation networks' national network enabled coordinated and consistent adoption across regions, and the individual connectivity of each individual health innovation network within its local ecosystem enabled the programme to be adapted for local NHS needs.

# Supporting information and quotes

## Supporting information

- The impact of a computerised test of attention and activity (QbTest) on diagnostic decision-making in children and young people with suspected attention deficit hyperactivity disorder: single-blind randomised controlled trial, NIHR randomised control trial published in 2018.
- A national evaluation of QbTest to support ADHD assessment: a real-world, mixed methods approach, published by BMC Health Services Research in 2024.
- Implementation, readiness and resourcing: a practical guide to the adoption and spread of health innovation programmes (PDF only), published by the Health Innovation Network in 2023.

## Quotes

"From the initial East Midlands pilot programme across 3 local NHS trusts, within a couple of years via the 15 Health Innovation Networks, we are close to 100 per cent implementation across the NHS in England, benefiting more than 70,000 children and young people and saving valuable NHS resources."

"The guidance from NICE (published in 2024) is key to driving ongoing adoption, and the rollout of QbTest is an example of the fantastic results of close and effective collaboration between research and innovation partners – working together to build an evidence base and then drive the implementation of technologies that transform patient outcomes, free up valuable clinical time, and generate NHS savings."

Nicole McGlennon, Managing Director of Health Innovation East Midlands.

"In October 2024 QbTest achieved the fantastic milestone of 1 million tests worldwide, and our collaboration with the health innovation networks has provided the basis for rapid expansion within and beyond England. It has been a key part of the jigsaw that has enabled us to benefit so many children and young people globally."

Tony Doyle, Managing Director, Qbtech.

"QbTest has revolutionised ADHD diagnosis for children and young people by offering an objective assessment tool that measures all 3 core components. Made possible through the collaboration in the East Midlands, this innovation has significantly reduced the time to diagnosis, providing families with quicker and more accurate assessments. This is a clear example of how partnership-driven innovation can lead to more efficient and effective healthcare solutions."

Professor Kamlesh Khunti, Director of NIHR ARC East Midlands and Professor of Primary Care, Diabetes and Vascular Medicine at the University of Leicester.

"It takes a certain amount of confidence and bravery for the industry to open their products up to independent evaluation, particularly when the findings may have huge influence on subsequent sales and revenue. Qbtech were confident in their product and it's fantastic to see the benefits that can arise from such industry-academic partnerships."

Dr Charlotte Hall, Principal Research Fellow, NIHR MindTech.

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