



Health Innovation
Yorkshire & Humber

Transforming Lives Through Innovation

Impact Report 2022-23



Office for
Life Sciences

Introduction

This year marks the 10th anniversary of the Health Innovation Network, which coincides with the NHS's 75th birthday. Since the establishment of the Health Innovation Network in 2013, we have seen (and supported) significant developments in the health and care system – and beyond – from the changes in how we use data, to the introduction and mainstreaming of Artificial Intelligence assistance in many patient pathways, the rapid digital transformation (with transformation particularly accelerated by the COVID-19 pandemic), and also the increased importance of health system integration.

The introduction of Integrated Care Boards has fostered exciting opportunities for place-based innovation, and a renewed focus on driving delivery through partnerships. Collaboration continues to be at the heart of everything we do, and our Innovation Hubs – established in South Yorkshire in 2019 and West Yorkshire in 2021 – embody how this works in practice.

The hubs provide dedicated innovation support and a conduit through which innovators can engage with system colleagues in a managed and efficient manner. Hub staff are part of the Health Innovation Yorkshire & Humber team but are also integrated within each system. Through this embedded model of working, the hubs foster the conditions needed to enable the rapid adoption and spread of innovation. You can read more about the work of our Innovation Hubs, which were referenced in the [Hewitt Review of integrated care systems](#) as an exemplar of good practice, [on page](#)

[58](#). This year we have also been working closely with colleagues in Humber and North Yorkshire Health and Care Partnership on the recent launch of their Digital Primary Care Innovation Hub.

By forging strong relationships with the health and care systems across our region and working nationally with other local health innovation networks to discover and evaluate new innovations, we have been able to successfully spread initiatives that have significantly improved patient care outcomes and delivered a return on investment to the NHS. For example, over the past two years we have implemented four crucial projects that help to improve asthma care and access for more than 21,600 patients. Together, this work has enabled more appropriate diagnosis leading to a reduction in asthma attacks, asthma-related hospital admissions and the use of steroids which are known to have long-term side effects. You can read more about this work on [page 25](#).

Impact of asthma programmes

21,600
patients
benefitted



from
improved
asthma care
and access

Introduction

Our role acting as a bridge between different sectors means we help to build a pipeline of solutions for the NHS from research, product development and evaluation through to implementation and commercialisation. For example:

- Our work with Klinik and the Priory Medical Group on a real-world evaluation to assess the benefits of their patient flow management system found that the Primary Care Network saved £300,000 and reduced patient calls from 99% to 30% of all contacts ([page 55](#)).
- The SENTINEL PLUS project has now spread from its origins as a pilot in our region – where 2,948 patients benefitted and 725 metric tonnes of eCO2 emissions were saved – to 305 Primary Care Networks across the country ([page 29](#)).
- We have supported the adoption and implementation of remote monitoring solutions across more than 100 sites in our region, benefitting 4,289 patients ([page 30](#)).

Impact of Klinik patient flow management system

£300k

saved by
1 Primary
Care
Network



Delivering these projects also generates a wealth of learnings, enabling us to share good practice and provide tangible resources to support frontline staff engaged in innovation. This year for example, we produced a suite of resources to help NHS colleagues implement virtual wards and remote monitoring solutions in their own organisations.

Because the spread of innovation is a complex and continually evolving journey, we work with innovator companies to guide and support them at the crucial moments of their growth, sometimes over several years. As this year's impact report coincides with the end of our second five-year license period, we're taking the opportunity to shine a spotlight on some of the innovators we've supported across that period. We've provided guidance and input at various critical stages of their development, from their first introduction to our region to the subsequent spread of their innovations across the country. Find out more about how we've supported [Healthy.io \(page 33\)](#), [Digibete \(page 52\)](#), [Doc Abode \(page 63\)](#), and [PinPoint \(page 42\)](#) in our Innovator Spotlight articles spread throughout the report.

Continuing with the theme of how we support innovators, this year we have been able to expand our digital health accelerator programme, Propel@YH, through the extension of our Boot Camp. This has enabled international innovators to bring ground-breaking health technology into the region ([page 17](#)). In January we hosted eight Nordic innovators in Leeds as well as taking the programme overseas for the first time to India. We've also taken strides forward in our work to help UK innovators grow their businesses overseas through our partnerships with the Department for Business and Trade (DBT) and the Association of British HealthTech Industries (ABHI). You can find out more about how we have helped C2-Ai to do this on [page 22](#).

Introduction

Improving the health and life outcomes of our region's population is the driving force behind all our programmes, including our ongoing support for innovators. We understand that by helping to create a population which is healthy we also create the conditions for greater personal prosperity and an inclusive, productive regional economy. Only by simultaneously focussing on both aspects of this intrinsic link can we begin to tackle long-standing societal challenges and unlock the region's true potential.

This is evident in our ongoing work on the YHealth for Growth campaign. Collaborating with stakeholders from across the region, we aim to drive inclusive growth in Yorkshire and the Humber. We also remain committed champions of the internationally recognised health and life science assets in our region, which represent a fifth of the UK's total employment in the sector ([page 8](#)) and provide a springboard for future regional growth.

Locally, we've undertaken work with South Yorkshire to map their health and wellbeing sector, identifying assets across the region and the economic contributions they make. This is now being used to inform our work on promoting the region to potential investors and collaborators both nationally and internationally. We are also founding members of the Leeds Health and Social Care Hub which brings together a diverse range of local partners to improve health outcomes and provide a boost for the local economy ([page 10](#)).

Addressing health inequalities remains a major priority that influences all our work. We continue to engage with public and private sector partners such as NHS England and Boehringer Ingelheim to tackle inequality, ensure that public and patients are engaged in developing solutions and provide support to

improve health in our most underserved communities. Last year we collaborated on a report with Public Policy Projects, which examined the digital divide and made practical recommendations to avoid exacerbating health inequalities in the process of driving digital advances. Find out more about this important work on ([page 48](#)).

Our evolving work on sustainability supports the NHS in its efforts to reduce its carbon footprint and promote net zero practices. From our unique position working with both the NHS and industry, we are able to identify and spread environmentally sustainable healthcare solutions. One such initiative is the Sheep Shed Green Award, which we were commissioned to deliver by Humber and North Yorkshire Health and Care Partnership. The programme recognises and celebrates the efforts of NHS projects in promoting sustainability practices that reduce environmental impact. This award is a great opportunity to showcase innovative practice across the region and their commitment to the green agenda ([page 67](#)).

Sustainability projects are most effective when they also deliver benefits for patients. The award-winning SENTINEL PLUS project ([page 29](#)), which we delivered in partnership with Hull University Teaching Hospitals and AstraZeneca, does just that as it improves asthma care whilst simultaneously protecting the environment. From its origins in Hull, the project, which is designed to reduce the use of single-use blue inhalers, has now been successfully implemented in 305 primary care networks across England. We are now working to facilitate its adoption nationally to ensure all asthma sufferers can benefit from this work. We were particularly pleased when the project was recognised as the 'Environmental Sustainability Project of the Year' at the HSJ Partnership Awards last November.

Introduction

Ten years after our inception, all 15 local health innovation networks are now nationally recognised as being integral to embedding innovation throughout the health and care system. In Yorkshire and the Humber, we are closely interwoven into the fabric of our region and its structures. We have developed strong partnerships and a deep understanding of the needs of our local populations, enabling us to implement programmes of work that have led to better, safer care and improved health and life outcomes for over tens of thousands of individuals. We have also forged numerous cross-sector collaborations, helping us to harness the opportunities offered by our world-leading health and life sciences assets and has led to £14m new investment for our region.

We recognise that we couldn't achieve any of these impacts without the good will and collaboration of our partners across the region and the hard work and commitment of everyone in our team. We look forward to continuing to build on this momentum working across the health, academic and

industry sectors to pursue new opportunities which will continue to transform lives through innovation in the region we serve.

Recognition of the importance of life sciences to the UK economy is growing, and health innovation networks are proudly seen by government as one of the enablers of this economic growth opportunity. In the context of the challenges faced by the NHS as it celebrates its 75th birthday, transformation through innovation is no longer seen as “nice to do but expensive” – instead it is a key tool in supporting the NHS to reduce the elective backlog, deliver on our Net Zero ambitions, support UK plc through a thriving life science sector, and reduce inequalities for, and with, our communities. We are immensely proud of the work and impact that has been achieved and that is featured in this report, and we thank you for all the support that you continue to show us.

Spread of the SENTINEL PLUS programme

305

Primary Care Networks have adopted SENTINEL PLUS



Richard Stubbs,
Chief Executive Officer and
Chair of the Health Innovation
Network



Professor William Pope,
Chair

Contents

8

Stimulating inclusive economic growth and building the Yorkshire and Humber health innovation ecosystem

Sean Clarkson, Head of Strategic Operations

13

Turbo-charging NHS market access for HealthTech innovators

Helen Hoyland, Head of Portfolio

22

Innovator Spotlight: C2Ai

25

A partnership approach to improving asthma care

Harriet Smith, Workstream Lead

30

Providing care in people's homes

Gemma Wright, Head of Portfolio

33

Innovator Spotlight: Healthy.io

37

Creating new care pathways to improve mental health for all

Juvaria Hassan and Mark Dines-Allen, Project Managers

40

Preventing cardiovascular disease

Noshina Kiani, Workstream Lead

42

Innovator Spotlight: PinPoint Data Science

46

Addressing health inequalities

Adele Bunch, Head of Portfolio

49

Working with healthcare professionals to provide safer patient care

Melanie Johnson, Patient Safety Programme Manager

52

Innovator spotlight: DigiBete

55

Using Artificial Intelligence to triage primary care patients

Sophie Bates, Workstream Lead

58

Innovation Hubs – a model for adoption and spread

Sarah Dew and Amy Lochtie, Innovation Hub Directors and Ellen Barnes, Digital Primary Care Innovation Hub Lead.

63

Innovator spotlight: Doc Abode

66

Tackling climate change to improve our health system

Kathy Scott, Deputy Chief Executive

Our Impact

Over the following pages we'll give you an insight into just some of the work we've done to transform lives through innovation in the Yorkshire and Humber region.

As a result of the work that we have carried out over the last year we estimate that:



343
companies
received

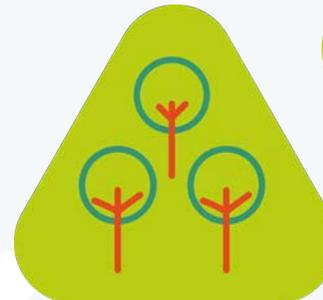
3,230
hours of
support from us



£14m
new
investment

related
to
healthcare and
technological
innovation

was
brought into
our
region



783
metric tonnes

of CO2e
emissions
have been
offset



Stimulating inclusive economic growth and building the Yorkshire and Humber health innovation ecosystem

In last year's impact report, Sean Clarkson, our Head of Strategic Operations, described how we would continue to champion and grow our region's health and life sciences ecosystem. Our 2023-2028 strategy reaffirms this commitment, outlining our ambition to grow the region for the benefit of its population by creating a globally recognised innovation ecosystem underpinned by a prosperous and inclusive economy.

These are bold ambitions which other regions are also seeking to achieve. What sets our region apart is how these ambitions are shared across key



**Dr Sean Clarkson,
Head of Strategic
Operations**





organisations within the region: continually inspiring collaborative projects with regional impact as their core focus. Thanks to our previous work and that of other local partners, combined with a growing internationally recognised asset base, we have a very strong platform to build upon. However, there is much more work to be done to both grow the profile and impact of our region's health and life sciences innovation ecosystem, and importantly, to tackle deep-rooted regional challenges which limit our ability to continue growing.

[The UK Government's Life Sciences Vision](#) cites the two key goals of the health and life sciences sector as improving patient outcomes and driving economic growth. These two areas are at the heart of all our work, owing to the well-known symbiotic links between health and the economy. In this section we'll provide an overview of our strategic projects, activities, and partnerships which specifically focus on three areas of economic growth, whilst also contributing to the health of the region's population.

The scale of the opportunity and challenge

The North of England's reputation in health and life sciences continues to grow, thanks to a strong network of [1,440 life sciences businesses](#), universities, research institutions, and healthcare providers. Consequently, the [North of England's health and life sciences sector contributes around £13.6b](#) to the national economy every year: a third of the sector's total contribution. Over 58,757 people are employed in health and life sciences across the North of England, representing a fifth of the UK's total employment in the sector.

Yorkshire and the Humber is at the forefront of this continued growth, with health and life sciences being a key driver of the region's economy and a key contributor to the wider North of England's health and life sciences economy. In 2021, Yorkshire and the Humber alone had [14,300 people working in health and life sciences](#): the second highest regional share of employment in the medical technology sector and 10% of the

The North's Health and Life Sciences sector





national sector total. Yorkshire and the Humber is already renowned for health and life sciences, with huge potential to influence health and life outcomes internationally, with the region's existing assets providing a fantastic springboard to future growth. However, we know there are still key challenges and barriers the region must overcome to unlock its true potential.

[Life expectancy across Yorkshire and the Humber can vary by almost two years](#)

in comparison to the South of England, meaning around 90 more people per 100,000 die under the age of 75 in Yorkshire and the Humber. The unbreakable relationship between the economy and societal health means that a strong economy is paramount to supporting people live healthy lives, whilst a healthy population is a critical part of a productive economy. This is all too clear to see through the region's productivity, which is on average 38% lower than London and the South East.

Capitalising on opportunities for growth in a way which maximises the region's existing assets and strengths, whilst also tackling these long-standing health challenges which hold back the

region's workforce are key factors in unlocking the region's true potential. This twin challenge is something we have been aware of for some time, and understandably, has driven much of our work over the past 12 months in partnership with stakeholders from across the Yorkshire and Humber region.

How we are supporting the region

Driving inclusive economic growth

In conjunction with Yorkshire Universities and NHS Confederation, we continue to lead our YHealth for Growth partnership, seeking to champion the intrinsic link between good health and inclusive economic growth. We aim to ensure key local and national stakeholders understand the contribution they can make towards building healthy communities and creating a strong economy which benefits everyone. Throughout 2022-23, we've continued promoting our partnership and underlying messages via a range of high-profile events, publications, and opportunities to contribute to emerging

Yorkshire and the Humber's health and life sciences sector



14,300
people working in the sector

Yorkshire and the Humber's productivity

38%
lower productivity than

London and the South East





policy. For example, YHealth for Growth is a key case study of the Leeds Health and Social Care Hub. Over the year ahead we have ambitious plans to expand our work, increasing its contributions to key policy thinking and engaging with additional local and national stakeholders.

Another example of our work to stimulate regional investment is our digital health accelerator programme Propel@YH which supports small and medium-sized enterprises (SMEs) to further develop and spread their innovations. Building on its success over the past four years, we have now introduced international Propel Boot Camps, a five-day version of the digital health accelerator course. As a result, to date, the Propel@YH programme and Boot Camps have supported 44 SMEs and enabled £59k of investment into the Leeds ecosystem ([see page 13](#)).

Raising the profile of the Yorkshire and Humber health innovation ecosystem

The South Yorkshire region is regularly cited as having a rich health and life sciences asset base, however there is little evidence to support this. We've been working in partnership with the South

Yorkshire Mayoral Combined Authority (SYMCA) to undertake a mapping exercise of the [South Yorkshire health and wellbeing sector](#). The work was designed to identify the health and wellbeing assets across the region and their economic contributions, map clusters of sub-sector excellence, and recommend areas of further work. The study found that South Yorkshire's health and wellbeing sector comprises 1,815 businesses who employ 89,985 people (representing 1 in 6 people within the region).

Collectively, the sector has an international reputation for medical devices and contributes £3.3b Gross Value Added (GVA) to the economy: representing 12% of South Yorkshire's total GVA. The study also made recommendations around investment, skills, and better marketing South Yorkshire's assets to exploit further investment and economic opportunities. This work is hugely valuable, and the findings and recommendations are being used to inform SYMCA's future marketing, development, and international ambitions. We are also using this work to inform our own approach to marketing the region to potential investors and collaborators across national and international boundaries.

Similarly, we have been working with partners from across West Yorkshire and the Department of Health and Social Care (DHSC) to develop the [Leeds Health and Social Care Hub](#). The hub is designed to build upon existing regional partnerships and bring together the DHSC and key local organisations, creating a community of experts to improve local healthcare and tackle health disparities. The hub is also intended to position Leeds as a key location for professionals seeking careers in health and social care, helping to retain and develop talent to tackle regional workforce shortages, whilst also providing a boost to the local economy. As a founding partner of the hub, we look forward to continuing working with other local organisations and colleagues from DHSC to utilise the hub as an opportunity to effect change across the region and further market the region's strengths and assets.

Growing the impact, scale, and reach of the Yorkshire and Humber health innovation ecosystem

We have been, and continue to be, actively engaged with NHS England's Greener NHS programme, on both a regional



and national level, providing leadership and identifying solutions that help the NHS achieve its Net Zero targets.

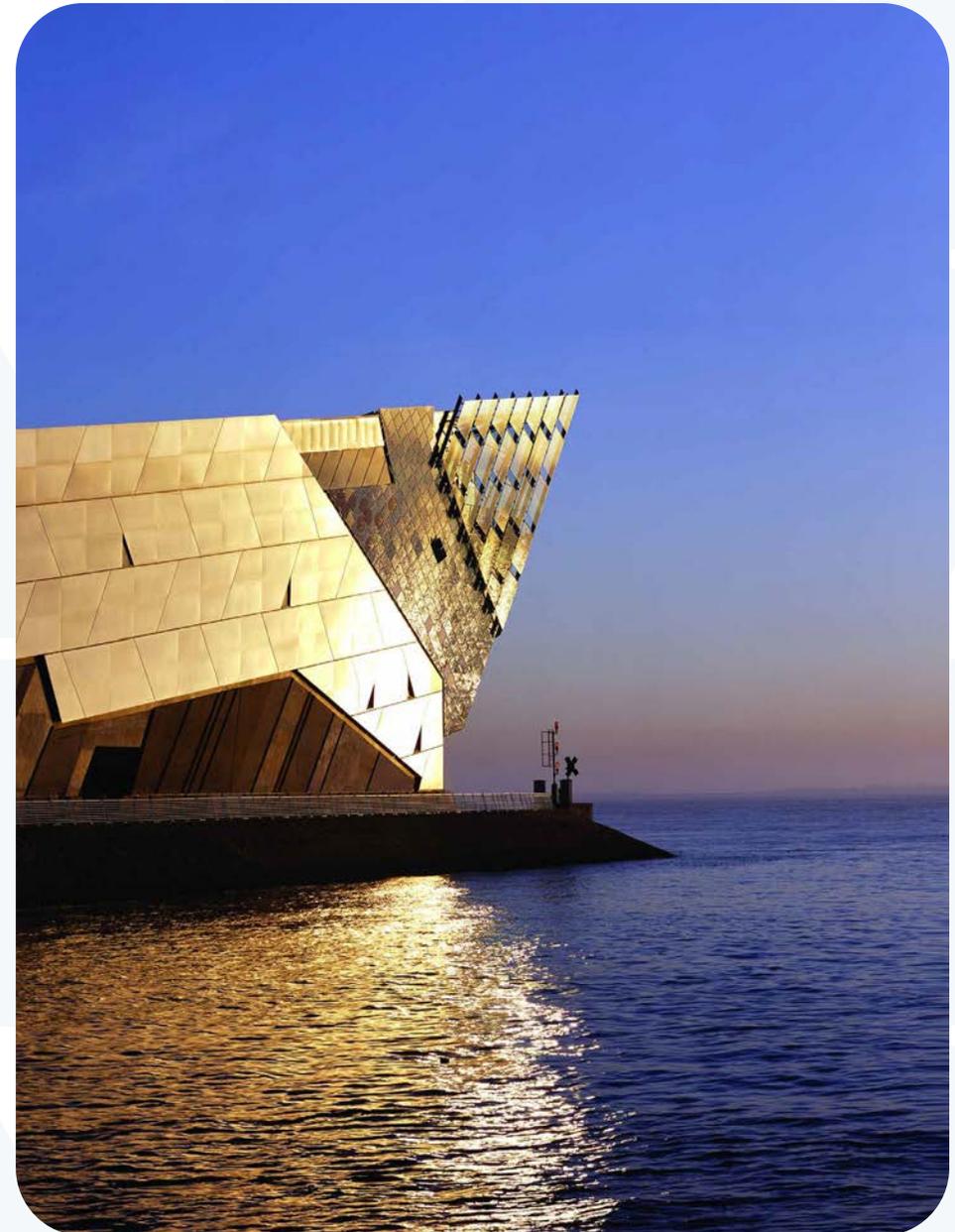
In partnership with Greener NHS, the Sustainable Healthcare Coalition, and with colleagues across the Health Innovation Network, we have brought together resources to help innovators calculate their carbon impact. This has included leading sessions to support innovators to understand the policy and strategic context of a Net Zero NHS and ways to evidence the contribution of their innovation and business.

This is still an emerging area, but we are committed to highlighting the importance of net zero and the climate impact on healthcare. We will do this by continuing our collaborative work with the regional NHS team and our local Integrated Care Systems (ICSs).

For example, together with Humber and North Yorkshire

(HNY) Health and Care Partnership, we will be launching a project later in the year to support collaboration between innovators with 'green' products or services and the NHS, helping them to introduce carbon-reducing solutions into the HNY region, in line with the system's sustainability aims and ambitions.

Further work is planned for the next 12 months across the region, including bringing learning from international healthcare systems to deliver carbon-reducing care.





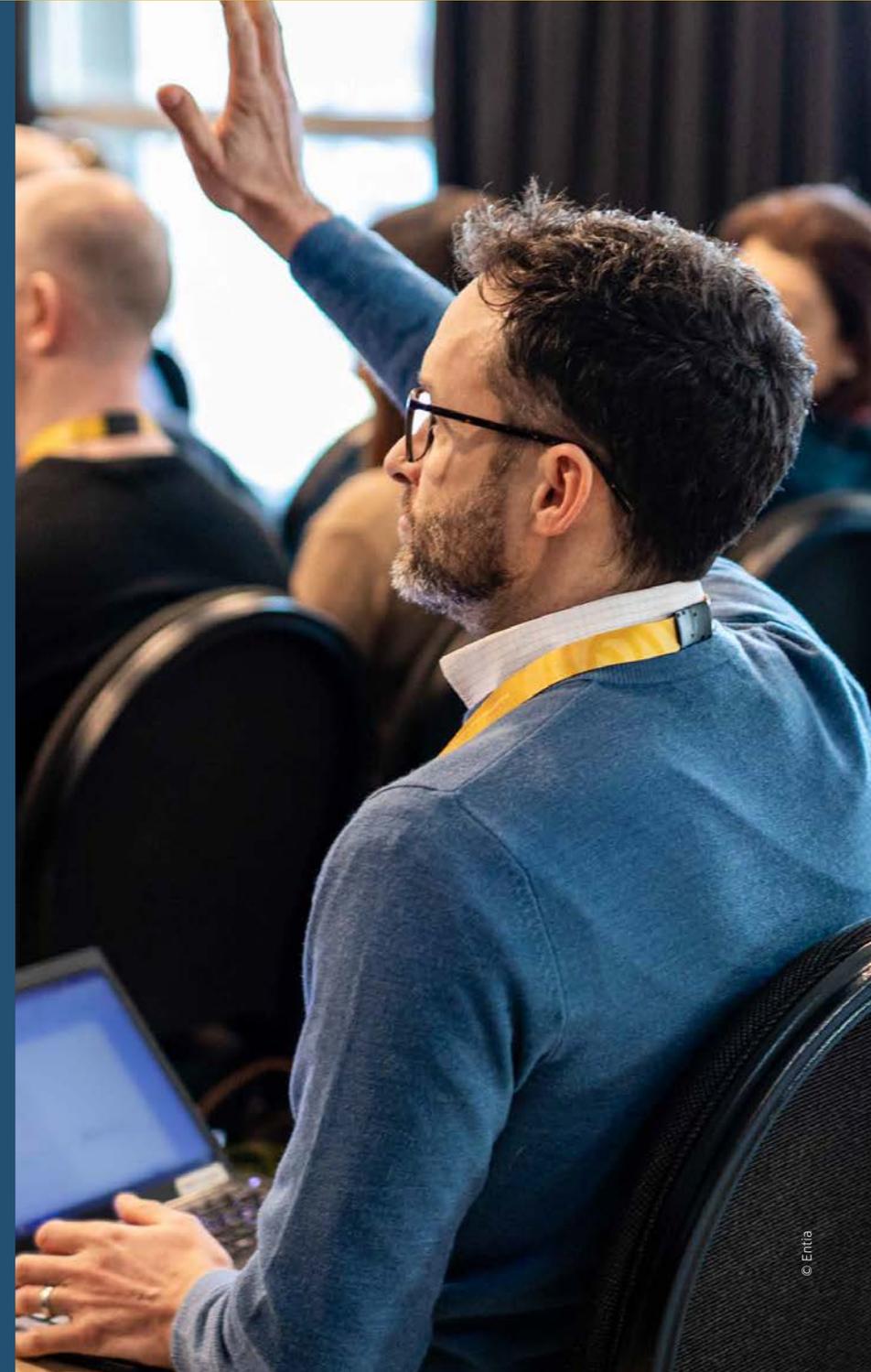
Turbo-charging NHS market access for HealthTech innovators

Our Propel@YH digital health accelerator has this year completed its fourth edition supporting another 11 small and medium-sized enterprises (SMEs) with innovations that have potential to improve health outcomes. The programme provides HealthTech innovators with access to a structured course of support and advice to help them understand the NHS and ultimately bring the best digital health solutions to the region's population and the wider health economy.

Helen Hoyland, our Head of Portfolio for Commercial, Digital and Growth, explains how Propel@YH has developed and built a track record of success, this year providing 127 hours of support to 44 innovators and leveraging £59k of investment into the Leeds City ecosystem.



Helen Hoyland,
Head of Portfolio





Propel@YH is delivered in collaboration with our partners, Nexus at the University of Leeds, Hill Dickinson, Barclays Eagle Labs, West Yorkshire Health and Care Partnership and Leeds City Council. These organisations work with us to help guide the innovators to meet the specific demands of the NHS. The programme includes a series of masterclasses, delivered by our partners and supporters on all aspects of building a successful and sustainable business, such as funding, research and UK legal subjects.

Of the 34 applications received for this year's cohort, 18 shortlisted companies were reviewed by the assessment panel and 11 were selected for the programme.

The companies chosen for our fourth cohort were:

- **ADDVantage:** delivers efficiencies and sustainability through tech-enabled solutions and associated data-driven insights.
- **Better Medicine:** Artificial Intelligence powered tools which

enable doctors to diagnose and fight cancer in more efficient and accurate ways.

- **Careology:** provides digital support to cancer patients by connecting them to their clinical team and caregivers from the point of their diagnosis, throughout their treatment and into recovery.
- **CareNetworx:** provides a care management app for families who need help coordinating care for loved ones with long term health conditions.
- **ehealth Compass:** a ground-breaking clinical CRM platform which reduces health inequalities and optimises outcomes.
- **Enable2:** makes it easy for the NHS and local authorities to help non-English-speaking people and communities via rapid online booking of interpreters.
- **Medwise.ai:** is the search engine designed for healthcare professionals to find information at the point of care.



Alexis Twigg, Founder of CareNetworx explains how he benefitted from the Propel@YH programme

Support provided to innovators by Propel@YH in 2022-23





- **Pulse Health:** a secure communication and community platform designed for the NHS that connects two million health and social care workers in one place.
- **Recreo VR:** designed for care home residents and their carers helping them to relive memories, create new ones and bring people together through shared experiences.
- **VIKO.ai:** empowers patients to help themselves through digital self-service powered by artificial intelligence.
- **Weather Flare:** knows how the weather affects you and sends real-time personalised weather forecasts that can predict your 'good', 'bearable' or 'bad' days up to 5 days in advance.



Dave Richtor, Founder of Weatherflare, talks about what he's enjoyed about being part of the Propel@YH accelerator programme



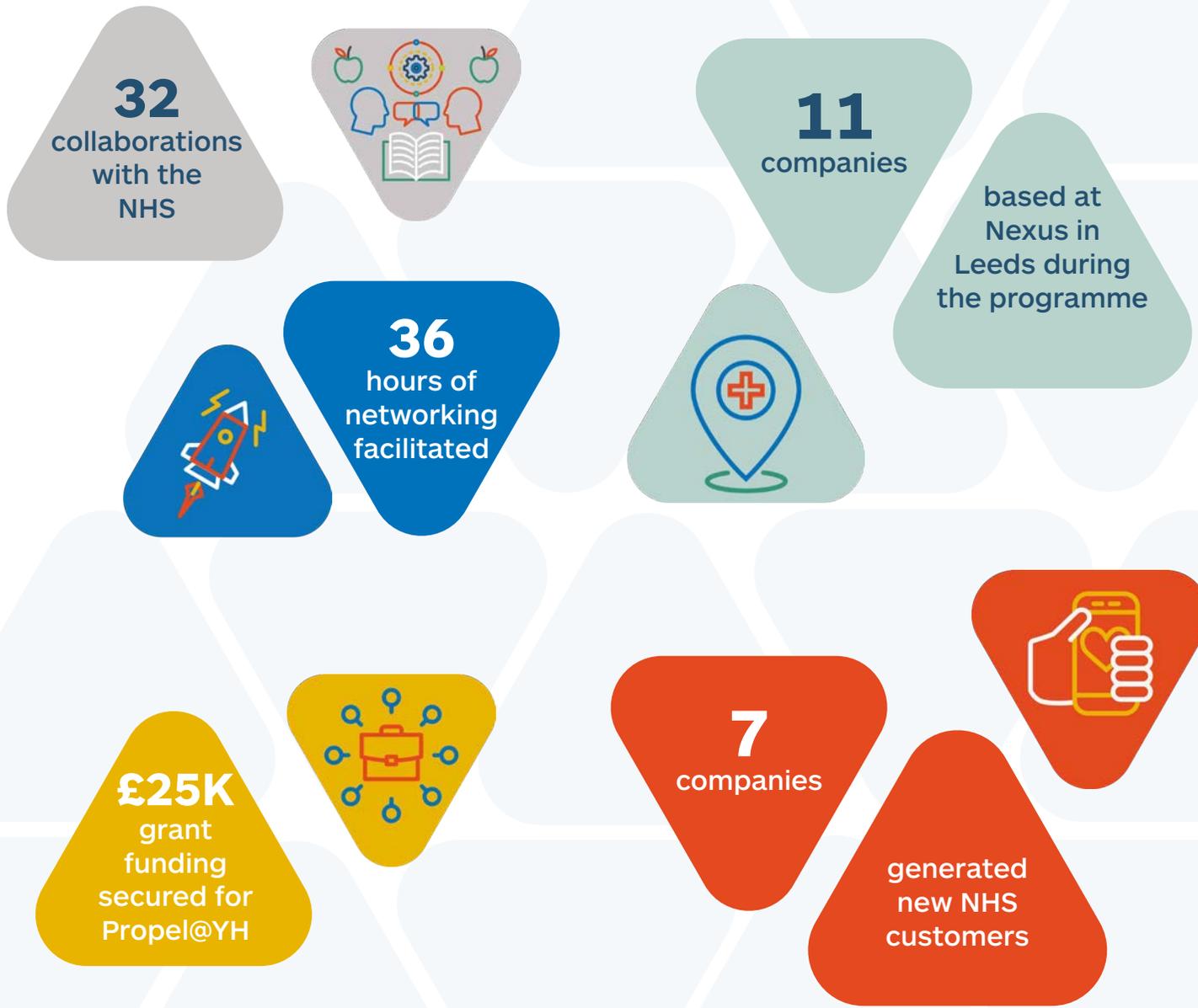


Our evaluation of this year's programme found that:

- Propel@YH facilitated 36 hours of networking time between our innovator companies and national or local NHS stakeholders which resulted in 32 collaborations with the NHS
- 11 companies used Nexus in Leeds as their base over the course of 8 months
- £25K grant funding secured for the programme
- 7 companies generated new NHS customers

During their time on the Propel@YH programme, Medwise.ai secured £1m in investment from Finance Yorkshire and other investors, it is headquartered in Leeds and plans to strengthen operations in the Yorkshire region.

Impact of Propel@YH in 2022-23





Propel@YH Boot Camp

Our Boot Camp for innovators outside the UK builds on the success of Propel@YH and has been developed with international HealthTech SMEs in mind. The five-day programme of intensive support and masterclass content, provided by our expert partners, gives innovators a crash course on the UK healthcare market, access to subject matter experts and the opportunity to engage directly with local NHS stakeholders as well as the wider HealthTech ecosystem in the Yorkshire and Humber region.

Leeds is a perfect fit to host international companies wanting to enter the UK market with 109,000 businesses generating over £69b, the Leeds City Region is the largest contributor to the UK economy in the North and the largest regional economy outside London. Over 600 businesses in the region supply products and services to the health and care sector and 22% of the UK's digital health jobs are based in the region.

Following the inaugural US Boot Camp in 2022, we were delighted to see the impact of this as three companies established their UK bases in our region. This provided further impetus for us to secure three additional Boot Camps.

In January 2023, eight innovators from the Nordic countries were selected to bring health innovations to the Yorkshire and Humber region in the second international Propel@YH Boot Camp.

The Nordic cohort included:

- **Cuviva:** a scalable platform that connects the individual with health care professionals and relatives, providing personalized health services, real-time communication, and shared patient data
- **Dignacare (Senscom):** a user-friendly solution that combines sensors, big data and AI to notify when a resident needs change of incontinence products
- **Leviosa:** developing the next generation of electronic health record systems for healthcare providers
- **Lifeness:** a two-way treatment hub for obesity and related diseases. Lifeness lets doctors, nurses, therapists, and health coaches easily follow up their patients
- **Njord Medtech:** solving unmet needs in radiology and patient handling for sustainable healthcare
- **Smart Crowding:** a system that enables optimised resource utilisation with decision-making support in real-time for better patient flow
- **Thula:** a software product company dedicated to helping its customers achieve time and monetary savings through optimisation



Find out more about our Propel@YH Boot Camp for Nordic innovators in this video



- **Visikon:** end-to-end digital health communication by combining technology with clinical knowledge and animated narratives.

The Boot Camp was delivered in partnership with Leeds City Council, Nexus at the University of Leeds, Barclays Eagle Labs and Hill Dickinson solicitors along with content from various other subject matter experts.

Over the five days we delivered structured masterclasses on the NHS, covering:

- Growth and spread
- Evidence and evaluation
- Governance
- Legal
- Funding, finance and grants.

As well as bringing innovators into the region, this year

for the first time, we took the Propel@YH overseas to India for a taster of the Boot Camp. The purpose of the trip was to act as a final part of a selection process to identify Indian innovator companies that were ready to come to the UK market. The application call covered the whole of India, and we received 148 innovator applications. After review, 48 were selected to pitch. From this we used our expertise and skills to decide on the final 25 innovators who were the furthest ahead in their journey. These innovators had a range of HealthTech products and services, some digital, some devices and a few AI solutions.

We already have a healthy pipeline of future international Boot Camps covering the Canadian and Middle East territories and look forward to working with other international territories to import innovation into the UK.

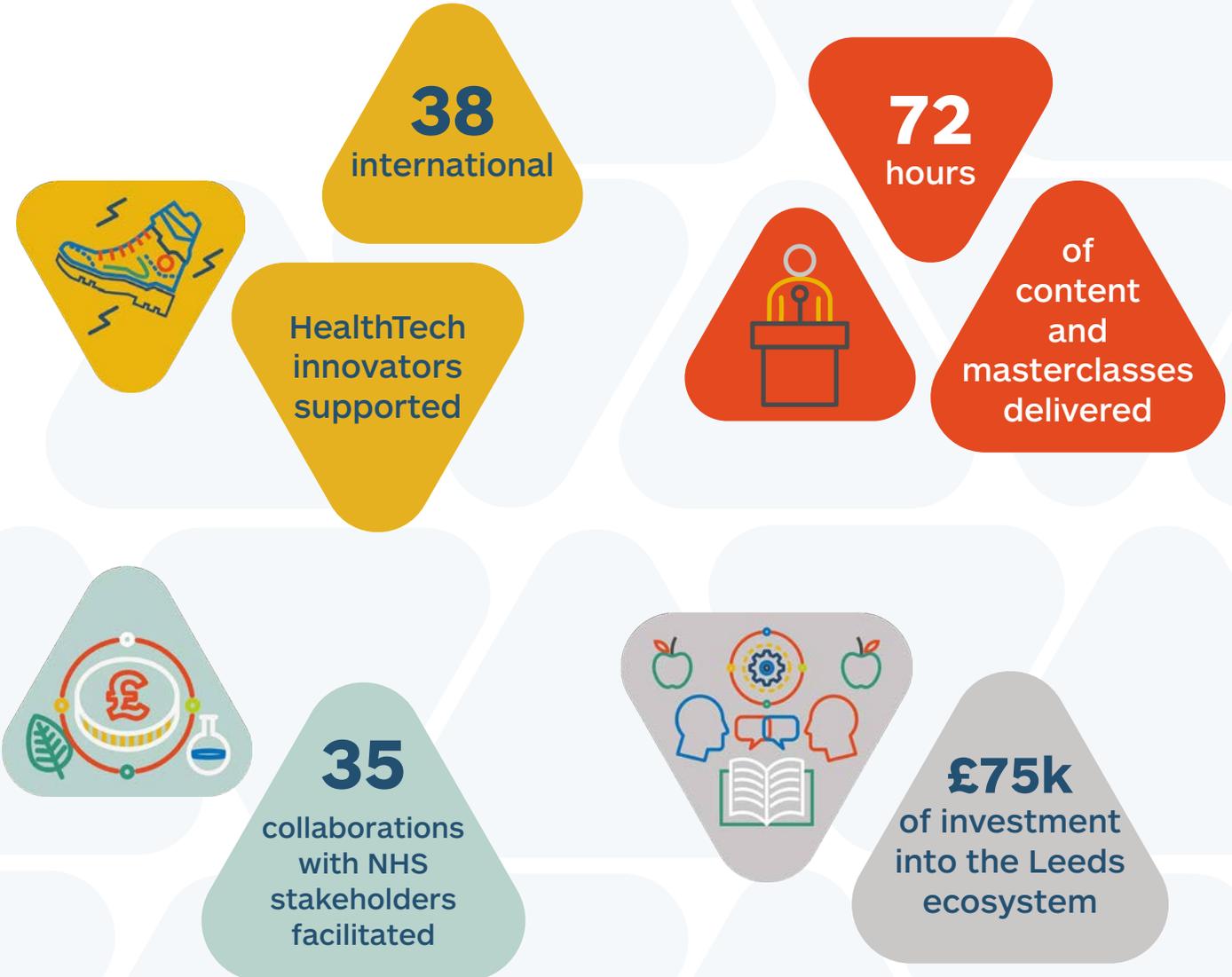




Over the three Boot Camps delivered so far, we have now:

- Delivered the programme to 38 international health tech innovators
- Facilitated 72 hours of content and masterclasses
- 2 US and 5 Nordic innovators are investing in the Yorkshire region
- 35 collaborations facilitated with national and local NHS stakeholders
- £75k invested in the Leeds ecosystem to deliver the Boot Camp.

Propel@YH Boot Camp impacts to date





Propel@YH Boot Camp stories of success

Behavidence

Behavidence was one of five US-based SMEs selected for the Propel@YH Boot Camp in 2022.

The Behavidence AI enables monitoring of mental health conditions by analysing a person's smart phone interactions to help generate a mental health score, which is then compared to other people diagnosed with ADHD, depression or anxiety. It has been developed to help identify risk of relapse of conditions whilst also screening and remote monitoring for clinical interventions if necessary.

The Propel@YH Boot Camp provided a perfect opportunity for Behavidence to engage with UK healthcare experts about bringing their technology to the NHS, as the Health Innovation Yorkshire & Humber programme focused on developing the company's understanding of NHS government, finance and procurement frameworks. The accelerator also introduced them to key stakeholders, connecting them with the right support to evaluate their technology and its suitability for the UK market.

This support has been central to the successful adoption and spread of Behavidence's innovation, as well as to supporting the company to find the right assistance, generate investment and enable growth. Following the Propel@YH Boot Camp, Behavidence successfully set up an office in the vibrant Nexus community, based at the University of Leeds. The company now plans to expand the UK team to support their growth across the country and beyond.



... the programme helped us to seek out other opportunities and helped us to realise there's a lot to do and even more opportunities in the North of England, rather than taking the classic route of settling in London."

**Roy Cohen,
Co-Founder and CEO of Behavidence**



Propel@YH Boot Camp stories of success

SingFit

SingFit is a revolutionary award-winning digital health platform and music app designed to improve wellbeing through the therapeutic benefits of music.

It has been developed to provide a cost-effective, best-in-class treatment to help successfully tackle many of today's most pressing healthcare problems, including dementia, depression, and social isolation.

The Propel@YH Boot Camp for US HealthTech innovators provided an ideal opportunity for SingFit. The 2022 Boot Camp introduced SingFit to pilot partners, and was valuable in helping them to assess the viability of the UK as a new market and to demonstrate efficacy and positive user experiences of people using the SingFit app.

We have also supported the company to access advice regarding regulatory approval, while helping them to define and articulate their value proposition to key stakeholders.

Following the Boot Camp, we are now supporting SingFit with adoption and spread, helping them with piloting their technology and conducting suitable evaluation prior to their UK launch.



The speed of our UK launch was really fuelled by the information that we gathered at Health Innovation Yorkshire & Humber international Boot Camp. Health Innovation Yorkshire & Humber brought together the players with the knowledge that allowed our team to very quickly assess how long it would take to launch SingFit solutions in the UK and the resources it would take to do so."

**Rachel Francine,
CEO and Co-founder of
Musical Health Technologies**



Innovator Spotlight: C2-Ai

As well as helping UK HealthTech innovators gain access to the NHS market, we can also support them with their international export aspirations. We spoke to Richard Jones, President and Chief Operating Officer at C2-Ai about how, through our partnerships with the Association of British HealthTech Industries (ABHI) and the Department for Business and Trade (DBT), we provide opportunities for companies like them who are ready for export to attend trade missions in the USA, Middle East and China.

Copeland Clinical Ai (C2-Ai), a multi-award-winning healthcare analytics and AI company, develops artificial intelligence-powered tools to help hospitals reduce avoidable harm and mortality, save lives, and make significant savings on operating expenditure (potentially millions per hospital).

In the UK, C2-Ai is focused on the prioritisation of the elective waiting

list, ensuring that patients are risk stratified on their individual clinical need.

The company's technology was named among the 10 essential digital health ideas for a UK COVID-19 national response by Healthcare UK (part of the Department for International Trade) for its ability to help predict avoidable harm and mortality and





free up capacity in intensive care units for COVID-19 patients. In the UK alone, the app has contributed to saving 455 lives in the last year.

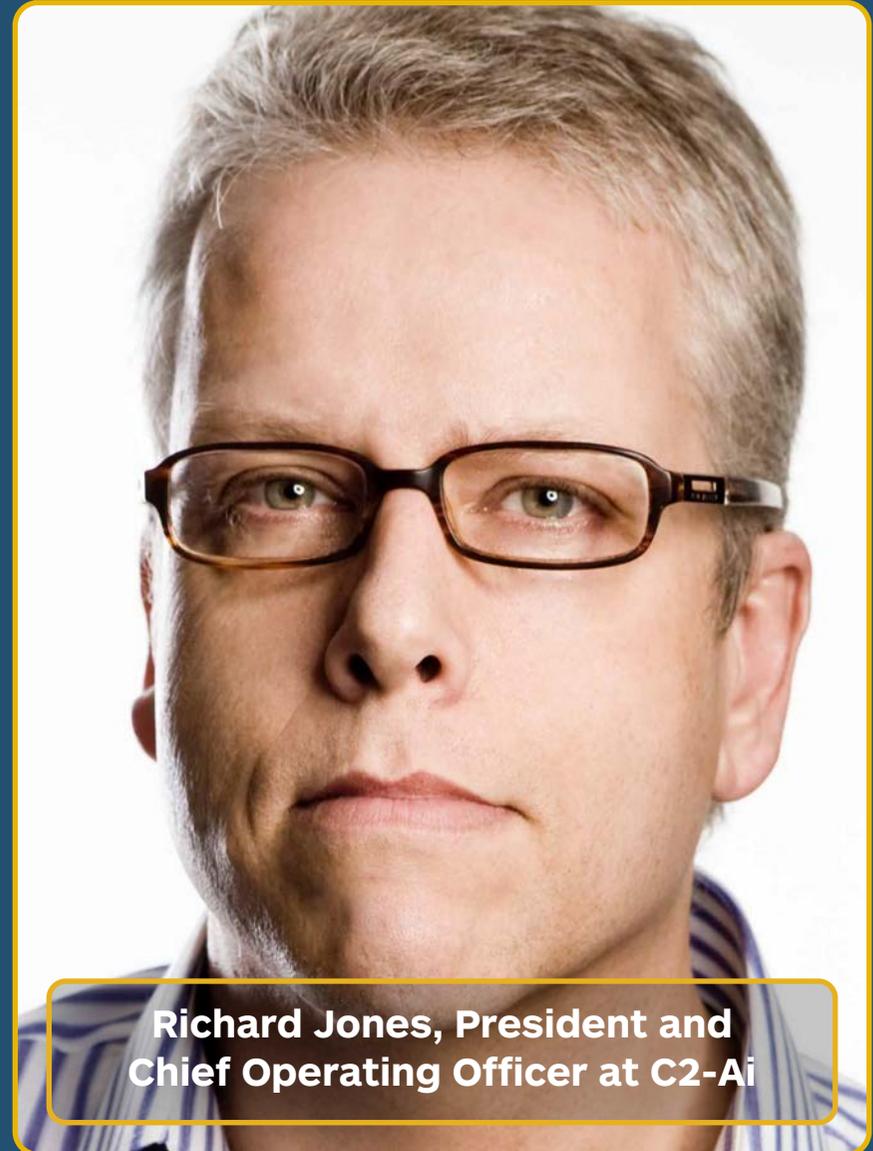
Together with our partners, we have helped C2-Ai to extend its global market access to 11 countries around the world, including the USA.

How have we been involved?

By partnering with organisations such as the ABHI and the DBT, we provide companies with the opportunity to exhibit products and services at leading health technology fairs. In 2020, C2-Ai was among the small group of innovative UK HealthTech businesses to join us as part of the ABHI UK Pavilion at Arab Health. As the leading healthcare trade show in the Middle East, the show represents a significant opportunity for UK companies to connect with buyers and clinicians in the region.

Since then, we have been working closely with C2-Ai, supporting the company to articulate their value proposition and business model to stakeholders and connecting them to the help they need to succeed in the Middle East and further afield.

We have continued to help the company strengthen its export strategy through our partnerships and support programmes. In 2022, C2-Ai were one of the 40 UK HealthTech innovators to successfully secure a place on the ABHI's US Accelerator. The programme supports UK HealthTech companies with market entry to the US, with a series of trade missions taking place throughout the year to introduce them to key stakeholders across some of the largest healthcare systems in the States.



Richard Jones, President and Chief Operating Officer at C2-Ai



Domestically, C2-Ai was one of the eight companies chosen to take part in our Digital North accelerator programme in 2021, which we run in conjunction with the other three northern health innovation networks. The programme enabled the company to participate in showcase events demonstrating their technology and facilitating one-to-one introductions to key NHS stakeholders. As part of the programme, we also helped C2-Ai to co-develop a localised business strategy for our region, strengthen relationships with the commercial teams in the NHS and co-create a narrative for adoption of their innovation across the North of England to support the recovery priorities of the NHS in the wake of COVID-19.

Impacts and outcomes of our support

C2-Ai's Elective Waiting List Prioritisation System has been commissioned by NHS England and deployed at a number of NHS trusts in the UK, as Integrated Care Systems (ICSs) prepare to implement elective recovery plans. Surgeons across several NHS trusts have been able to improve surgery waiting times and reduce A&E admissions after successful clinical trials.

Following successful trials in three trusts and a cohort of 125,000 patients, with the help of the Innovation Agency, the health innovation network for the North West Coast, Cheshire and Merseyside Integrated Care Board has extended their roll out to 17 acute trusts in that region. The solution is now being rolled out in a third of all ICS regions.

NHS reported results show the system helps reduce emergency admissions by up to 8 per cent, can free up 6,000 years of surgeon time, saves 125 bed-days for every 1,000 patients (potentially an additional 15 per cent of bed capacity) and could save up to £2.4b for the NHS. One trust saw a 27 per cent reduction after six weeks of deployment and the NHS reported time saving of five minutes per patient per triage.

What's next?

The C2-Ai system will soon be deployed in more than 30 per cent of NHS trusts and in Scotland, Ireland and Canada. The system is having an impact globally, was named by Healthcare UK as one of 10 Essential Digital Health approaches and selected #1 by the Irish equivalent of the NHS (out of 100 digital health solutions) to support their elective recovery.



A partnership approach to improving asthma care

Over the past two years we have worked on four crucial projects that helped to improve asthma care and access for more than 21,600 patients. More appropriate diagnosis, management and referral of patients needing further specialist input is helping to reduce asthma attacks, asthma-related hospital admissions and the use of steroids, known to have long-term side effects. Workstream Lead Harriet Smith explains how we continue to play a central role in the adoption and spread of innovations to improve asthma care particularly for underserved communities.

As a key partner of NHS England's Accelerated Access Collaborative (AAC), we have supported the rollout of two asthma care innovations (FeNO and Asthma Biologics) to improve asthma pathways in England as part of their Rapid Uptake Products programme. The programme identifies and supports products with positive NICE recommendations that align to the



Harriet Smith
Workstream Lead





NHS Long Term Plan’s key clinical priorities but have lower than expected uptake.

We worked with our three Integrated Care Systems (ICSs) to support asthma pathway improvements by taking a pathway-based transformation approach. We provided clinical and transformation leadership, shared best practice and developed education and implementation materials for those involved in providing asthma care.

A package of educational resources for each innovation was created to support clinicians. The toolkits were designed in a practical way to support teams adopting and sustaining the use of FeNO and Asthma Biologics.

A pathway transformation to improve asthma diagnosis

Annually the NHS spends around £1.1b on asthma treatment and management, 90% of this cost goes directly on asthma medication, including a high-volume prescription of steroid inhalers.

FeNO testing is a simple, non-invasive test to measure the amount of nitric oxide in an exhaled breath – a biomarker for airway inflammation. FeNO testing can improve patient care by contributing to a faster and more effective asthma diagnosis when used alongside a detailed clinical history and other tests. It can also be used to monitor patient response to asthma treatments.

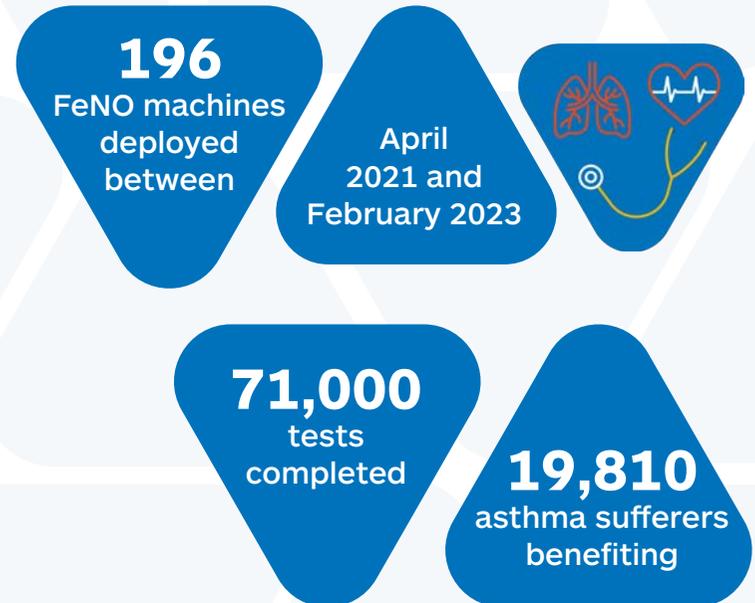
We worked closely with all the three ICSs in our region to support the spread and adoption of FeNO machines across Yorkshire and the Humber. Working with individual Primary Care Networks (PCNs) we were able to increase the number of machines available across each area and facilitate discussions with FeNO suppliers to ensure each PCN was achieving value for money. Between April 2021 and February 2023, we have seen the number of FeNO machines increase from 9 to 196 machines, which resulted in approximately 71,000 tests being completed, benefiting 19,810 asthma sufferers.



In a span of five months, we have now referred more patients to the severe asthma service due to high FeNO readings despite optimal treatment and adherence which would have not happened before.”

Respiratory Consultant

Between April 2021 and February 2023





We found that working with Health Innovation Yorkshire & Humber gave us a link with key people within the NHS as for a commercial organisation is sometimes more difficult to liaise with the NHS directly, but this way of working was like a seamless conduit and has helped to place more FeNO devices where most needed.”

**Steven Adair,
Business Manager UK,
FeNO by NIOX**

Proven technological innovation for asthma care

Asthma Biologics work in a targeted way, by disrupting pathways causing airways inflammation, helping to manage symptoms and reduce exacerbations.

We helped the uptake and spread of this innovation by providing primary care with access to educational resources, patient information, and tools such as SPECTRA - Astra Zeneca’s audit tool - and UNITE service to help identify and stratify uncontrolled asthmatic patients.

These therapies can transform patients’ lives by reducing long-term side effects of other treatments, such as steroids, and reduce the number of life-threatening asthma attacks.

As a result of the work undertaken within all three of Yorkshire and Humber’s severe asthma centres in Sheffield, Leeds and Hull, from April 2021 to February 2023 we have seen a 32% increase in the number of severe asthma patients being treated with biologics.

Working closely with all three of our region’s Respiratory Clinical Networks, the three severe asthma centres, and lead clinicians we held two webinars bringing together

more than 170 health and care professionals across all the three ICS footprints to share examples of best practice. We also facilitated a specific webinar on biologic therapies introducing the concept of a Yorkshire-wide consensus pathway for uncontrolled asthma in adults. An interesting outcome was a discussion around the possibility of introducing the homecare monitoring tool for those patients being treated within the community.

Making asthma literature equitable

As a result of our work spreading the adoption of asthma biologics through the AAC Rapid Uptake Products programme, we became aware of an opportunity to work with Mid Yorkshire Hospitals NHS Trust to help improve access to asthma services for underserved communities. We were successful in applying and securing AAC’s Pathway Transformation Funding for £140k.

The funds helped to support ‘The Straight Talking: Making health literature equitable’ project led by the trust. We worked in partnership with them and with local third sector organisations. The initiative was designed to work within South Asian communities and help to address some of the myths and stigma attached to this



condition that prevent members of this community from accessing the care they need. Some believe that asthma is hereditary and transmittable, which means they are reluctant to leave their houses, even for family weddings. Another key aim of this project was to improve patient engagement and education on asthma management and treatment options, providing support with adherence to their inhalers and to minimise harm associated with excess corticosteroid use.

Poorly controlled asthma is known to increase the chances of death, and over usage of reliever inhalers (commonly known as blue inhalers) have unnecessary side effects as well as being harmful to the environment. However, asthma information in alternative languages is not provided by pharmaceutical companies, meaning patients in our region were struggling to understand and manage their respiratory condition, or what treatments were available to them.

Working with South Asian patient groups to produce a variety of resources that would help increase their understanding of what asthma is and how to self-manage the condition has been integral to the success of this project. Some of these resources included the development of graphic medicine sheets, leaflets and QR codes, animations and videos in 10 different languages to help self-manage asthma or on how to take medication during Ramadan.

The project also involved identifying and training some existing COVID-19 champions from the South Asian community to become wider respiratory champions, who understand the language and culture. Not only is this an excellent and innovative approach, but it avoids excluding those who are not engaging with digital information. This project demonstrates how it is possible to tackle health inequalities by harnessing the knowledge of local communities to co-produce targeted resources and interventions.



I missed out on lots of activities when I was younger as my parents were too scared to let me get active because of my asthma condition."

Focus group participant



Another example of excellent work from West Yorkshire. Our respiratory consultant and our colleague from Health Innovation Yorkshire & Humber have created some excellent videos and training material for patients with asthma and community champions. This work complements the Children and Young People Core20PLUS5 framework."

**Dr Sohail Abbas,
Chair of Health Inequalities Network,
West Yorkshire Health and Care
Partnership**



Award-winning programme continues to make a difference to asthmatic patients

A collaboration between Hull Universities Teaching Hospitals and AstraZeneca has revolutionised the care of asthmatic patients delivering improvements in care for thousands of people with uncontrolled asthma.

Approximately 23,000 patients in Yorkshire have poorly controlled asthma and would benefit from further review by clinicians. Most asthma sufferers rely heavily on the use of blue inhalers, which is associated with a much higher risk of asthma attacks and hospitalisation. Blue inhaler prescribing has also a negative impact on our environment.

SENTINEL PLUS is an award-winning programme that helps to improve asthma care by reducing the reliance on blue inhalers, a type of inhaler that helps to temporarily relieve the symptoms of asthma.

We have played an instrumental role in SENTINEL PLUS becoming part of the regional AAC Rapid Uptake Products programme and supporting its adoption across all six Primary Care Networks (PCNs) in Hull and East Riding – in total 44,275 fewer blue inhalers have been prescribed in a region with some of the highest usage rates in the country.

We also organised several events that brought together more than 400 healthcare professionals to share best practice and further raise awareness of this programme and the resources available to clinicians. There are now 305 PCNs signed up to SENTINEL PLUS throughout England.



Find out about the SENTINEL programme which treats the underlying inflammation of asthma, while reducing the reliance on and prescribing of blue 'reliever' inhalers and the greenhouse gas emissions they produce.



The SENTINEL project was highly commended at the HSJ Awards



Providing care in people's homes

In the current NHS climate of a persistent urgent and emergency care crisis, virtual wards and remote monitoring offer safe and effective opportunities to help ease pressure on hospital bed capacity, A&E departments and ambulance services while helping to improve patient outcomes and experience.

Our Head of Portfolio for Patient Safety, Remote Monitoring and Virtual Wards, Gemma Wright, explores how over the past two years we have supported the adoption and implementation of remote monitoring solutions across more than 100 sites benefitting 4,289 patients and saving the NHS costs associated with the avoided visits.



**Gemma Wright,
Head of Portfolio**

A virtual ward is a safe and efficient alternative to NHS bedded care that is enabled by technology. In a virtual ward, support can include remote monitoring using apps, technology platforms, wearables and medical devices such as pulse oximeters.





All Integrated Care Systems (ICSs) in England have been asked to deliver virtual wards equivalent to 40 to 50 beds per 100,000 population by December 2023. In the Yorkshire and Humber region, this equates to 2,700 virtual beds.

From 2020 to 2022 we were commissioned by NHSX (now the NHS Transformation Directorate) within the Regional Scaling Programme to accelerate the use of digital innovations that transform patient care. Working closely with all three Yorkshire and Humber ICSs, we helped to implement three remote monitoring innovations – TytoCare, Docobo and HealthCall – across 106 sites including a wide range of services, care settings and patient cohorts. These included primary care, acute trusts, hospitals, emergency departments covering adults, older people and paediatrics.

Outcomes

4,289 patients benefitted

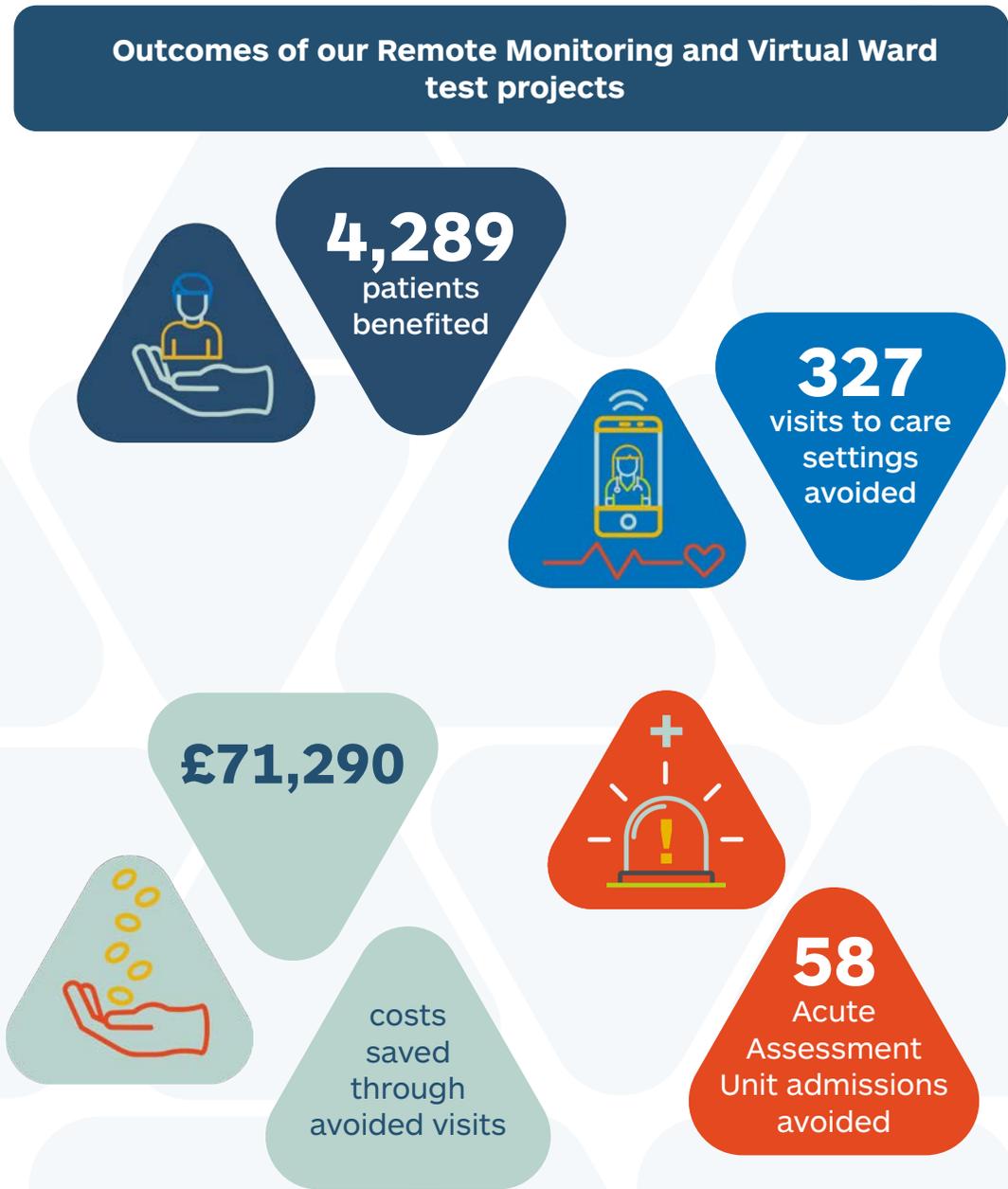
Avoided visits:

- 134 GP visits
- 30 A&E visits
- 58 Acute Assessment Unit admissions avoided
- 36 Ambulance journeys
- 44 Outpatient appointments
- 91 Home visits
- 73 Community Nurse visits

Total potential monetary saving of above avoided visits: £71,290

Other benefits:

- Emergency department consultants able to complete 72 Emergency Department consultations remotely (working from home)





- 70 referrals completed using the HealthCall online system rather than via telephone
- 95% of patients and carers surveyed agreed that TytoCare helped them improve their health
- 95% of patients and carers surveyed agreed that TytoCare made it easier to get in touch with health care professionals
- 85% of patients and carers surveyed agreed that TytoCare saved them time through fewer visits to a GP clinic or other health and social care setting
- 85% of patients and carers surveyed agreed that TytoCare made them more actively involved in their health
- 100% of clinicians surveyed felt Docobo enabled an informed decision to be made and enabled a positive, supportive patient experience.

Sharing expertise and lessons learnt

Within the Regional Scaling Programme, we created a comprehensive set of lessons learned, completed a detailed benefits realisation exercise and partnered with NIHR Yorkshire and Humber Applied Research Collaborative and NIHR Children and Young People MedTech Co-operative to produce a robust evaluation including the views of patients, families, carers, health care professionals and key Integrated Care Boards (ICBs) stakeholders.

Our experience on this programme gave us a great insight into and understanding of virtual wards and remote monitoring, the benefits they can provide, the common challenges and risks, how to best approach implementation and how to ensure sustainability for the future. We were keen to share this learning with our colleagues in the ICBs to support them with their ambitions around virtual wards and remote monitoring.

Over the past year, we have created and shared a suite of resources encompassing our practical lessons learnt and top tips in a series structured around the five main stages of implementation: Start, Engage, Deliver, Embed, Sustain. These are presented in a range of formats including succinct written guides, videos, infographics, blogs and social media content.

A key principle of our resource series is that it represents our real-life experience and learnings from our time implementing remote monitoring redesigned pathways and services.



Watch this video to see how digital remote monitoring and virtual ward solutions can help improve the delivery of patient care.



Innovator Spotlight: Healthy.io

Healthy.io is a remote HealthTech organisation working in partnership with the NHS on a mission to harness smartphone technology to enable early identification of people with diabetes who are at risk of developing Chronic Kidney Disease (CKD). Jimmy Endicott is Healthy.io's UK Marketing Director and he explains that the company was the first organisation in the world to get smartphone cameras approved as a CE marked medical device.

Chronic kidney disease is known as the 'silent killer' because it often remains asymptomatic until it has reached an advanced stage and it's a significant risk factor for cardiovascular disease. Like many diseases, it's much easier to treat when caught early. There are estimated to be 1.2m people in the UK with undiagnosed chronic kidney disease.

Healthy.io's Minuteful Kidney innovation increases adherence to kidney health testing by enabling disengaged patients to complete a urinary ACR kidney health test in the comfort of their own home, improving early detection of kidney disease in at-risk demographics, such as people with diabetes or hypertension.





Over the past five years, Health Innovation Yorkshire & Humber has been working in partnership with Healthy.io and NHS organisations across the region, helping to pave the way for wider adoption and spread of the innovation. Health Innovation Yorkshire & Humber has played a key role in helping Healthy.io to successfully pilot their solution in the NHS to demonstrate its potential, as well as helping the company foster evidence gathering and secure funding to rapidly deploy and scale their technology in the NHS, in the region and beyond.

With support from Health Innovation Yorkshire & Humber, thousands of people living with diabetes across West Yorkshire are using pioneering new technology available via the NHS to test for chronic kidney disease at home, without needing to visit their GP practice.

How have we been involved?

In 2018, we supported Healthy.io in designing and implementing a pilot programme to test the feasibility and effectiveness of their smartphone-based urinalysis technology in a primary care setting. The pilot was successfully delivered across Hull, Airedale and Wharfedale – enabling 500 patients with diabetes, across ten Modality Partnership GP practices, to test their own kidney health from home using the company’s ACR test kit and smartphone app.

Over the past five years, we’ve continued to support the company to connect with potential partners in the NHS, and rigorously test, evaluate and implement their solution in the NHS, supporting wider spread.



Jimmy Endicott, UK Marketing Director at Healthy.io



In 2019 we commissioned York Health Economic Consortium (YHEC) to evaluate the innovation's cost-effectiveness compared to standard care in the NHS. The following year, funded by the NHS, the Accelerated Access Collaborative (AAC), the National Institute for Health Research (NIHR) and in partnership with what at the time was the NHS Leeds Clinical Commissioning Group, we supported Healthy.io with the roll-out of the programme in Leeds. Within the first six weeks, nearly 800 patients were contacted, and this figure reached nearly 2,000 in less than a year.

“From the successes of our initial pilot study, by September 2020 we’d moved on to do a more significant roll-out in Leeds. Health Innovation Yorkshire & Humber was instrumental in sourcing the funding from NHSX that helped

to make that possible. By April 2021, again by working in partnership with Health Innovation Yorkshire & Humber and the local health system, we’d moved on to a West Yorkshire-wide launch. It grew from city scale to a regional scale. In summer 2021, we then deployed into the Humber region, so it became something that involved multiple health systems in the Yorkshire and Humber footprint.”

– Jimmy Endicott

Impacts and outcomes of our support

We have continued to work with Healthy.io helping secure funding and supporting with the roll-out of the service across our region. To date, the MinuteKidney home testing kit has been offered to over 50,000 eligible patients, of which 51% have completed a test (26,216). Out of those,

over 11,000 tested abnormal or high abnormal – a high abnormal strongly indicating they have CKD. This means that those patients are being followed up on the appropriate care pathway, allowing early intervention where necessary. Patient satisfaction on the use and recommendation of the service is high, 93% reported that the test was “very easy” or “easy” with the oldest patient using it being aged 104.

Based on the economic modelling that we commissioned YHEC to carry out, it is estimated that 5,119 new cases of CKD have been identified. The economic benefits of the service outlined in the YHEC study shows that across West Yorkshire the estimated net cost savings over the first year were £289,652 increasing to £20,150,494 by year five. The savings are calculated based on the costs associated with management of End Stage Renal Disease (ESRD) and incidents common in later stage CKD.

“Sometimes the thing that gets in the way of scalability is being able to evidence unquestionably the robustness and success of an innovation, and Health Innovation Yorkshire & Humber helped with that by commissioning two rigorous independent evaluations of our work. They have also supported us in how we present this dataset to the clinical community. That was all made possible through Health Innovation Yorkshire & Humber.”



What's next?

Following the initial success made possible by the local health innovation network for Yorkshire and the Humber, the technology is being successfully rolled out in other parts of the UK, empowering patients to self-care, in turn helping to reduce unnecessary clinical appointments, reduce unplanned admissions to A&E and improve patient experience.

“All the health innovation networks are really focused on helping organisations like us spread adoption of innovation, particularly through sourcing funding, understanding the need, using data to be evidence-based, and driving scalability. All of the things that could get in the way of adoption and spread. The ‘secret sauce’ is people. That’s at the heart of all innovation and change, and Health Innovation Yorkshire & Humber has the relationships with the people on the ground that can really be the catalyst to make these scalable changes happen.”



Find out about Healthy.io - smartphone selfcare for people with diabetes. It enables more untested patients to complete a test at home using a CE marked postal testing kit and app.



Creating new care pathways to improve mental health for all

Mental health conditions can affect people of all ages, genders, and backgrounds and can have a significant impact on their ability to function and enjoy life. Project Managers Juvaria Hassan and Mark Dines-Allen explore how we have worked closely with our health and care colleagues to increase the uptake of two national programmes that support children and young adults with attention deficit hyperactivity disorder and eating disorders.

Helping young adults with eating disorders

Eating disorders can have a huge impact on a young person's life both physically and emotionally, affecting relationships with friends and their family, and causing anxiety. People experiencing an eating disorder often

Juvaria Hassan



Mark Dines-Allen





become more isolated, withdrawn and avoid social situations.

First Episode Rapid Early Intervention for Eating Disorders (FREED) is a programme for our younger population of 16 to 25-year-olds, who have had an eating disorder for three years or less. Young people seeking help through FREED are given rapid access to specialised treatment focused on the specific challenges we know young people face, and in the early stages of the condition. The programme has shown significant patient benefits helping to reduce anxiety as well as a reduction in the levels of disengagement from those needing treatment.

We worked closely with NHS services in our region to assess how FREED could be integrated into existing eating disorder services and pathways. We not only provided programme management support to our NHS partners, but we also helped to part-fund a tailored role to deliver the FREED programme by creating FREED ‘champions’. This

approach helped to successfully deploy the programme at City Health Care Partnership, CIC and NAViGO in Humber and North Yorkshire and at Sheffield Health and Social Care Partnership NHS Trust and South Yorkshire Eating Disorder Association in South Yorkshire. To date, 157 young people have benefitted from the service having a positive impact on their wellbeing and care outcomes.

In the past two years, we organised two ‘Community of Practice’ events to share successes and challenges of implementing the programme. Following this, our project team are now integral members of the monthly Yorkshire and Humber Clinical Network Community of Practice events. As part of this partnership, we hosted a lunch and learn session that was attended by our FREED champions and universities interested in learning more about FREED and how they can adopt this into their mental health services.

Impact of the FREED and Focus ADHD programmes





Using an objective computer-based assessment to diagnose ADHD

Attention Deficit Hyperactivity Disorder (ADHD) is a condition that affects people's behaviour. Many might struggle to concentrate and often feel unsettled and restless. It can have a huge impact on their social lives and their emotional development. In young people, this can mean that they struggle in school.

It is not always simple to determine if a child or adult has ADHD. Often clinicians will diagnose this condition through an assessment including a physical examination, a series of interviews with the patient and reports from other significant people, such as partners, parents and teachers.

The national Focus ADHD programme uses an objective assessment tool (QbTest) as a supplement, rather than a replacement for conventional clinical examination and subjective assessments and reports. The assessment evaluates all three core

components of ADHD (attention, motor activity and impulsivity) and compares these to normal values from a sample of children without the condition.

In our region we provided tailored support to trusts wishing to implement the programme. This has included supporting trusts in the development of business cases or helping to secure funding to pilot QbTest. Programme management support and resources were made available for all sites including supplying details of the evidence base and implementation plans. In addition, support was provided to ensure that all IT and Information Governance requirements were met.

Since the implementation of the programme in 2020, we have continued to support the roll-out of the QbTest, which is now available in all NHS trusts in our region. The test is now offered in 18 sites in total and to date it has benefitted 4,892 patients – 2,103 of these in the last 12 months.



After five years of battling, we now have a diagnosis of ADHD for our now 11-year-old daughter. The Focus ADHD programme is providing QbTest at scale reducing waiting as well as reducing family anxiety."

Parent



Both of my children have ADHD. However, with the use of QbTest the diagnosis for my daughter was quicker, with fewer appointments compared to my son's diagnosis without QbTest."

Parent



Preventing cardiovascular disease

Heart disease, including heart attacks and strokes, is a major health problem in the UK. It is one of the leading causes of death in the country and causes 1 in 4 deaths in England, putting immense pressure on the NHS. Over the past year, we have achieved significant success in our cardiovascular health and prevention work. Noshina Kiani, Workstream Lead for Cardiovascular Disease, highlights the key successes and initiatives undertaken.

We have been implementing several national cardiovascular disease (CVD) programmes, focusing on improving lipid management, incorporating novel treatments, and optimising hypertension care.

Through the National Lipids and Familial Hypercholesterolaemia (FH) programme, we aimed to enhance cholesterol management, increase FH detection, and optimise cholesterol-lowering medications.



**Noshina Kiani,
Workstream Lead**





Objectives included increasing cholesterol measurement, providing more treatment options for high-risk patients, reducing health inequalities through a national approach, and incorporating the latest approved treatments into lipid pathways.

The Blood Pressure Optimisation (BPO) programme made improvements, particularly in South Yorkshire, in transforming the prevention of cardiovascular disease (CVD) by optimising the clinical care and self-management of people with hypertension. Hypertension and high cholesterol, both leading risk factors for CVD, are often underdiagnosed and undertreated. The BPO programme has raised awareness about hypertension and provided a foundation for discussing other CVD conditions, such as lipids.

This programme has supported PCNs in identifying more patients with hypertension through case-finding interventions, including patient record searches and community pharmacy schemes. This approach has been adopted across the region, with all localities promoting the hypertension pathway

and several PCNs collaborating with local pharmacies on hypertension services.

Additionally, the BPO programme has focused on reducing health inequalities by targeting the most deprived populations. A notable case study from a practice in South Yorkshire highlights the success of the BPO programme, where an opportunistic case-finding initiative led to 700 patients having their blood pressure checked during a flu clinic. Overall, the BPO programme has demonstrated progress in addressing hypertension and CVD prevention by enhancing clinical care, self-management, and targeted interventions for at-risk populations and is also due to be extended for another six months.

We are also working on a project to review the primary care workforce to increase capacity for identification and treatment of lipid and FH patients as part of our national programmes. Objectives for this included establishing processes for patient identification, developing new ways to identify patients with a genetic pre-disposition, upskilling

the workforce, and enhancing patient access to trained non-medical professionals.

These local and national CVD programmes demonstrate a commitment to improving cardiovascular health through innovative solutions, early identification, and workforce development. Enhanced collaboration and knowledge sharing has also been central to some of the successes of these projects. By fostering a culture of collaboration among regional healthcare providers through regular workshops, webinars and events we have enabled healthcare professionals to stay updated on the latest research, treatments, and best practices in cardiovascular care which will help inform future their prevention strategies.

The initiatives and projects over the last year have contributed to better health outcomes and reduced health inequalities in the region. By continuing to promote innovation, collaboration, and evidence-based care, we are well-positioned to drive further improvements in cardiovascular health across the three Integrated Care Systems (ICs) in our region as well as with our local clinical commissioning groups (CCGs) and primary care networks (PCNs) in the years to come.



Innovator Spotlight: PinPoint Data Science

Founded in 2016, PinPoint Data Science is a Leeds-based innovator which has developed a game-changing, AI-driven blood test for cancer, designed to optimise the NHS two week wait urgent referral pathways. We talked to PinPoint Data Science Chief Executive, Giles Tully, about how the test is designed as a decision support tool to provide doctors with the information they need to more effectively triage patients when they first present with symptoms.

From 1m patients per year at its inception in 2010, two week wait referrals have grown steadily at approximately 10% per annum to 2.8m patients in 2022. The pressure on the system is unsustainable and the situation has only been exacerbated by the impact of COVID-19.

By flagging patients at either end of the scale, the PinPoint Test

allows those at highest risk to be prioritised for faster access to hospital care and those at minimal risk to be ruled out of urgent referral pathways altogether. The PinPoint Test, which is already active in West Yorkshire, helps NHS promises to deliver shorter referral waiting times, reduces patient anxiety and improves early cancer detection.



**Giles Tully, Chief Executive of
PinPoint Data Science**



How have we been involved?

We played an instrumental role in supporting the development of PinPoint's life changing innovation. The test itself was developed in collaboration with the University of Leeds and Leeds Teaching Hospitals NHS Trust, with support from Health Innovation Yorkshire & Humber, Leeds Academic Health Partnership (LAHP), and West Yorkshire and Harrogate Cancer Alliance.

Having worked with PinPoint from the very early stages, we have continued to support the company with acceleration and spread. This has included helping the company secure funding, connecting them with partners in the NHS, and trialling their technology to support wider spread.

We helped PinPoint Data Science to secure £750k Small Business Research Initiative (SBRI) funding to spread its test in North West Coast primary services at the end of 2021. Further support from ourselves and the

wider Health Innovation Network saw PinPoint receive a further share of £9m in SBRI Healthcare funding in 2022 to accelerate roll-out.

“Health Innovation Yorkshire & Humber has been really helpful at every stage. Anytime that innovation in cancer has been talked about, Health Innovation Yorkshire & Humber has been really good at bringing us along and promoting us. At the end of December 2021, we presented the exciting potential for our technology to a group of people from NHS England. That led to a series of meetings with NHS England, which in turn led to the SBRI work that we’re now doing. We’ve since had several grants, all of which Health Innovation Yorkshire & Humber has supported us in acquiring.”

– Giles Tully





Impacts and outcomes of our support

The latest round of SBRI funding, which saw PinPoint awarded with £1m, will see the technology being rolled-out across other areas of England with support from the Health Innovation Network, in particular Kent Surrey Sussex and the health innovation network for North West Coast.

At present PinPoint is in an evaluation stage having received this investment to accelerate progress. As a result of this injection of funding, GPs onboarding in West Yorkshire have tripled and we are supporting this activity to help maintain momentum. Once the evaluation is completed and data is available to demonstrate the effectiveness of the test, this innovation will be strongly placed to spread into other parts of the NHS.

We're working with Pinpoint and the West Yorkshire Cancer Alliance to onboard as many surgeries across West Yorkshire as possible with the objective to offer the PinPoint test to all patients referred on to a 'two week wait' pathway.

2021-22 data suggests up to 20% of current two week wait referrals could be safely ruled out and rapidly triaged into the correct patient pathway via the PinPoint green flag system. This equates to 560,000 patients per year. A less pressured two week wait pathway will further improve early detection and clinical outcomes. A 2022 paper on capacity modelling in the Leeds Teaching Hospitals NHS Trust's breast clinic has also shown definitively that the PinPoint Test has the potential to positively impact urgent suspected breast cancer referrals.





What's next?

The service evaluation of the PinPoint Test is now entering its final stages. The early data that is emerging is hugely encouraging. PinPoint is now working with all the 15 local health Innovation networks, Cancer Alliances and NHS trusts in a total of five regions in England: West Yorkshire and Harrogate, Cheshire and Merseyside, Humber and North Yorkshire, Lancashire and South Cumbria, and Surrey and Sussex. Together with these organisations, PinPoint is laying the foundations for widespread adoption of the Test, including quality assurance across laboratories and an implementation playbook to support a rapid roll-out. All being well, PinPoint will be ready to begin the process of deployment into those regions by late 2023 or early 2024.

“The NHS is an ecosystem and there are lots of different parts to it. Without Health Innovation Yorkshire & Humber, we would not be as integrated into the system or as well supported generally. We’ve been vetted and approved, and overall, it’s really helped with credibility and embedding us into the system. The focus is now around getting deployed at scale, particularly around both West Yorkshire and the broader regional footprint.”





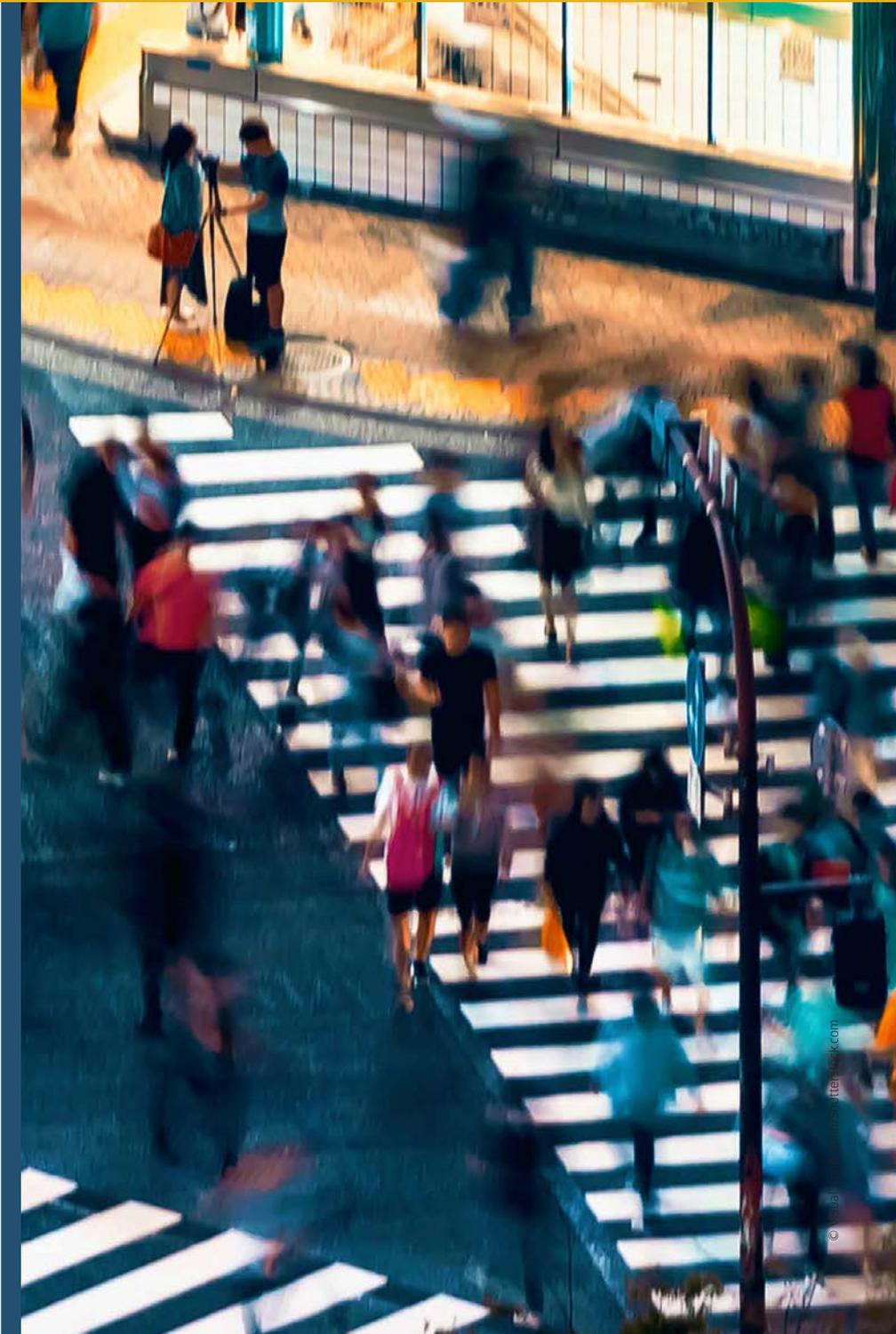
Addressing health inequalities

Life expectancy across Yorkshire and the Humber can vary by almost two years in comparison to the South of England. There has always been an intrinsic and unbreakable relationship between the economy and societal health: a strong economy is paramount to helping people to be healthy, whilst a healthy population is a critical part of a productive economy.

Our Head of Portfolio, Adele Bunch, explains how we have continued to engage with stakeholders during ongoing system pressures to understand the priorities of our Integrated Care Systems (ICSs) and local authorities to tackle inequality and provide support to improve the health of our most underserved communities across the region, including a new national Health Innovation Network programme which has generated £300k of funding for our region.



Adele Bunch,
Head of Portfolio





Building on the success of our YHealth for Growth campaign that seeks to tackle health inequalities by promoting the role of health in driving economic and inclusive growth in our region, we continue to evolve and further embed our health inequalities strategy into everything we do as an organisation to maximise our impact. To support this ambition our monthly Population Health Management (PHM) Roundtable convenes Yorkshire and Humber PHM Integrated Care Board leads, the West Yorkshire Combined Authority, NHS England and our West Yorkshire and South Yorkshire Innovation Hubs to drive forward the health inequalities agenda. We sit on the Leeds Anchors Network and have been involved in the scoping of the new Yorkshire Vitality Index, driven by Yorkshire Universities which will provide an assessment of levelling up efforts across the region.

Nationally, we work with the NHS England health inequalities team. This relationship was strengthened through the production of the [Tackling Healthcare Inequalities in](#)

[access, experience and outcomes guide](#) on behalf of the Health Foundation, co-written with an expert reference group. NHS systems and staff now have a resource with actionable insights and case studies designed to support local health inequalities intervention.

We were pleased to work with the Care Quality Commission (CQC) who secured funding from the Department of Business, Energy and Industrial Strategy's regulators pioneer fund, to develop a report demonstrating how GP practices can showcase innovation to address local health inequalities as part of regulatory assessments. The CQC will use the learning to continually develop its single assessment framework and associated methods and processes training of inspection teams, ways of working and quality assurance processes. Through the CQC's revised ways of working, it is intended that innovative ways of tackling inequalities which are being undertaken by primary care will be better encouraged, recognised, championed and shared.

We help to deliver the Innovation for Healthcare Inequalities Programme (InHIP) which is led by the Health Innovation Network in collaboration with the Accelerated Access Collaborative (AAC). This programme focuses on scaling medical technologies to underserved populations as described in the Core20PLUS5 initiative in partnership with Integrated Care Systems (ICSs). This work has generated around £300k of funding for our region, with each ICS being supported to apply for £100k. We now have three projects underway to improve cardiovascular and respiratory access, experience and outcomes.

In West Yorkshire, the InHIP project is targeting underserved patients to increase treatment rates and improve outcomes for Core20PLUS communities in Leeds at increased risk of cardiovascular disease. Humber and North Yorkshire is focusing its project on improving respiratory outcomes through the identification of uncontrolled severe asthma patients to address inequalities in access to Asthma Biologics. And in South Yorkshire, the project is targeting the population of Barnsley through Eclipse PROTECT (2) stratification software to ensure people with cardiovascular disease are reviewed and their treatment optimised.

Importantly, all InHIP projects feature strong patient and public involvement from among the 20% of our most deprived populations. We are closely supporting the three ICSs' clinical delivery teams and we look



forward to seeing the outcomes on targeted communities including increased uptake of interventions in due course.

Patient and Public Involvement and Engagement

Continuing the digital theme, we were pleased to lead a collaboration with Boehringer Ingelheim UK, the Health Innovation Network and the University of Plymouth to explore and share best practice in patient and public involvement and engagement (PPIE) in digital health innovation and adoption. PPIE can lead to more effective and appropriate deployment of innovation, improved access, experience and ultimately, better patient outcomes. Healthcare transformation should not be done to patients, but with them. Without effective engagement, patients can often reject technology, delaying impact and resulting in a lack of trust in the products. The project resulted in the production of the first evidence-based guide for PPIE in health tech innovation, designed to support clinicians, innovators and patient communities.

Last year, we won a commission from the AAC to develop a model for systematically gathering patient experience and insights, and ensure that it is woven into innovation uptake and adoption planning via an applied PPIE framework. This is a fantastic opportunity to shine a light on the value of working with patients, and how they can help shape an approach to ensure inclusivity at a time when health inequalities are in sharp focus.

Working with the Yorkshire and Humber Applied Research Collaboration as our independent evaluation partner, we carried out a gap analysis to understand the current opportunities for patient engagement for the five MedTech Funding Mandate and Rapid Uptake Products to support the development of the new framework. Through semi-structured interviews with patients who have experienced use of the innovations, we were able to understand areas for improvement which will enhance and improve adoption plans for innovations in the future.

The Digital Divide: Reducing inequalities for better health

What the pandemic highlighted, along with the huge inequalities across digital access and health, are the myriad potential benefits of digital healthcare. However, we must be mindful that digital transformation can widen healthcare inequalities. We worked with our partners at Public Policy Projects to gain an understanding from senior stakeholders and experts in digital poverty, the access and skills disparities faced by deprived communities and the prioritisation required from our ICSs and local authorities to tackle the issue. The report was published in October 2022 and makes a series of practical recommendations to help ICSs harness the digital advancements that have been made in health and care since the start of the pandemic. The findings also suggest that unequal access to digital care and uneven digital skillsets could exacerbate health inequalities, a trend the report describes as a digital divide.



Working with healthcare professionals to provide safer patient care

The Yorkshire and Humber Patient Safety Collaborative (PSC) is one of 15 in England delivering the National Patient Safety Improvement Programmes as part of NHS England's Patient Safety Strategy. Our PSC is delivered by the Improvement Academy which is hosted by the Bradford Institute for Health Research. Melanie Johnson, Patient Safety Programme Manager explains what we're doing to help improve patient safety.

Medicines Safety Improvement Programme

The Medicines Safety Improvement Programme (MedSIP), part of the Yorkshire and Humber Patient Safety Collaborative, focuses on reducing harm from opioids for non-cancer pain.



**Melanie Johnson,
Programme Manager,
Patient Safety
Collaborative**





Opioids are a highly effective class of analgesics and, when used judiciously, are of great benefit to many people living with pain. However, in the case of ‘chronic non-cancer pain’, when the source of long-term pain does not have a cause that can be treated, opioids can do more harm than good, particularly when used at higher doses.

The national MedSIP team developed a whole-system approach to reducing harm from opioids to support local approaches to helping people live well with chronic non-cancer pain across seven phases. Substantial progress has been made to implement the approach within Yorkshire and the Humber, with all three Integrated Care Boards (ICB) engaged across the seven phases.

In the early stages of the programme, we conducted a thorough analysis to better understand the work initiated in this area. Our investigation revealed a lack of joined up working between Primary Care Networks (PCNs), trusts, places and ICBs.

We recognised that we had an opportunity to bring together all these stakeholders to share learning and best practice with the aim of preventing the need for our system colleagues to ‘reinvent the wheel’. An example of this is a webinar that saw over 100 health and care professionals attending across our region and beyond including colleagues from primary care, secondary care, ICSs, all 15 local health innovation networks and the voluntary, community and social enterprise sector to share successes, challenges and provide learning opportunities.

In addition, we have built an extensive but easy-to-use resource library. We recognised during the initial phases of our programme that there were a lot of publicly available resources on the subject of chronic pain management and opioids, including public information campaigns, patient information materials, patient stories, healthcare professional information and learning materials and social prescribing resources. However, these were not available in one easy-to-access place.

We will continue to build our learning community, expand and share the resource library and work together with our systems to support and spread quality improvement work.

Managing deterioration in care homes

This programme aims to reduce deterioration associated harm by improving the prevention, identification, escalation and response to physical deterioration in care homes. The aim is for at least 85% of care homes to adopt a deterioration management tool.

There are multiple stakeholders involved in the management of deterioration across health and social care. We have supported many colleagues as part of the Managing Deterioration Safety Improvement Plan. Support has been provided at various system-levels and has included networking opportunities, sharing of tools and resources and delivery of training.

Resources to support care homes have been further refined down to four modules. Evaluation of the training has been very positive with colleagues working in care homes in North East Lincolnshire, Rotherham and Kirklees reporting more confidence in recognising and responding to the signs of deterioration, benefitting patients and improving outcomes.

We have also built strong professional communities across Yorkshire and the Humber including 214 colleagues who are members of our Care Home Patient



Safety Network and 170 colleagues who are members of our PCN Support Network. Over the course of the year, we held events across both networks covering a wide range of topics including mental health in care home residents, deterioration, bowel management, medicines management, nutrition, how to implement change and how to build a care home multidisciplinary team.

Maternity and Neonatal Safety Improvement programme

The Maternity and Neonatal (MatNeo) Safety Improvement programme currently consists of two main drivers: improve the optimisation and stabilisation of the preterm infant and improve the early recognition and management of deterioration in women and babies.

The main area of work from the MatNeo Safety Improvement Programme this year has been within the 'Optimisation and Stabilisation of the Preterm Infant' workstream. In collaboration with the Maternity and Neonatal Clinical Networks

and the three Local Maternity and Neonatal Systems, across the regions' maternity and neonatal units there has been evidenced improvement in compliance with the British Association of Perinatal Medicine care bundle which consists of seven elements of care that, when delivered, are proven to improve outcomes for babies. For example, women breast feeding has risen from 40 to 55%, while normothermia has risen from 77 to 83%.

To recognise and applaud good practice we have created excellence certificates of gold, silver and bronze that has helped raise awareness of the importance of accurate data supporting high-quality clinical care. We have shared good practice via monthly newsletters.

Mental Health Reducing Restrictive Practice Safety Improvement programme

We are currently supporting five trusts in the Yorkshire and Humber region with close engagement with nine wards in collaboration with the National Collaborating Centre

for Mental Health. We host online learning community meetings every six weeks and have hosted two face-to-face meetings in Leeds.

We are supporting teams with quality improvement coaching and this has helped them to think creatively, generating and leading on their own change ideas to start reducing restrictive practice in their areas.

A great example of this in practice is the recycling scheme started by Sandpiper ward, part of Rotherham Doncaster and South Humber NHS Foundation Trust. It is an acute ward for both male and female adults of working age. The staff have involved patients in collecting recyclable items from bread bags, toiletries, toothpastes to cans and crisp packets. The trust works with a recycling company called Terracycle, that rewards organisations with points redeemable for a cash payment to a non-profit organisation.

The project has captured patients' interest keeping them occupied, making them feel valued and appreciated for their contribution and helping to reduce potential disruptive behaviours. It has also brought the staff and patients together. We are supporting the hospital team to celebrate and share their success with a view to spread and share their green initiative within their areas and the network through narrative stories and visual dashboards.



Innovator Spotlight: DigiBete

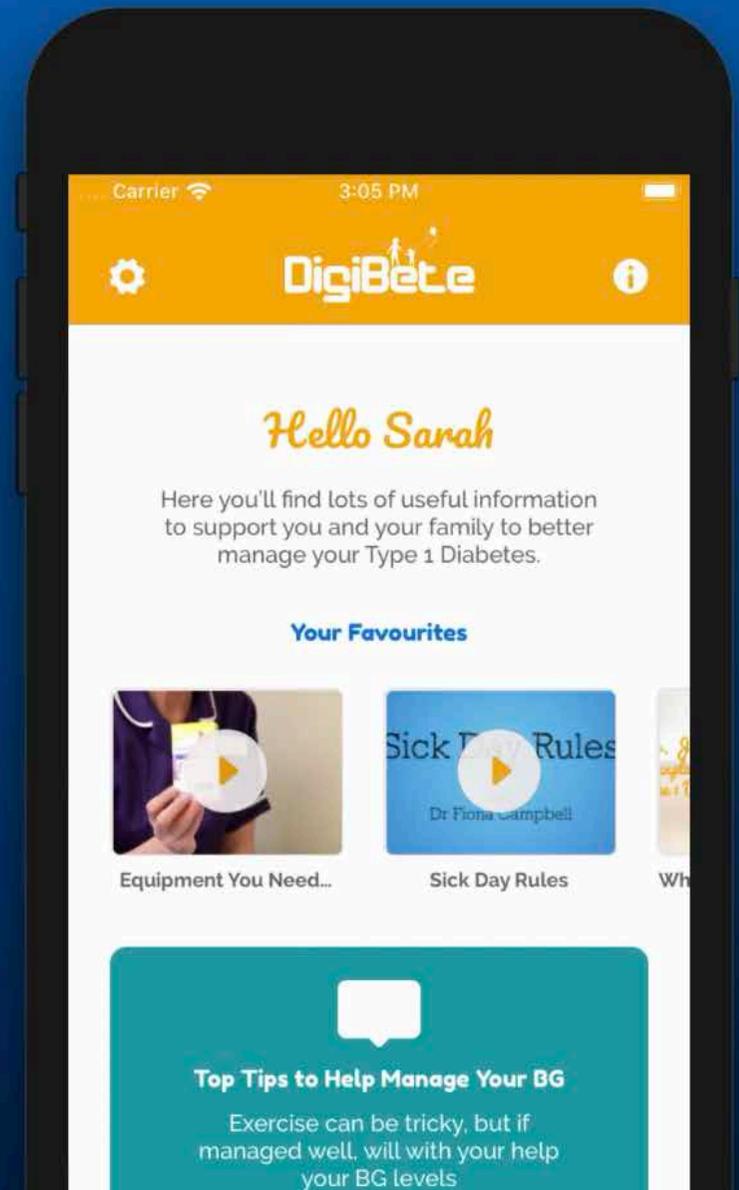
Born out of founders Maddie and Rob Julian’s personal experience of being parents of a child with Type 1 diabetes, Leeds-based DigiBete has developed an innovative, multi-award-winning digital platform that helps support children, young people and families to self-manage their own diabetes. Maddie tells us about how the platform was created in partnership with Leeds Children’s Hospital.

Co-designed with patients, families and clinicians, the DigiBete web platform includes a range of clinically approved videos and information on areas such as diet and exercise, as well as offering 24/7 support for patients and their families. The DigiBete Clinic and Patient Support App provides easy access to these resources and other important functionality as well as assisting clinics in helping patients and their families to better self-manage their condition.

DigiBete offers a clinic-to-patient communication system that enables clinics to help patients remotely. It also enables patients to keep up to date insulin records, health care plans and appointments. The technology has been especially important for clinics and support networks during the COVID-19 pandemic, ensuring patients could still access care without face-to-face support. It continues to have a significant impact on easing the growing

Welcome to DigiBete!

A home for young people, and families to manage type 1 diabetes





burden on healthcare professionals and scarce NHS budgets.

Health Innovation Yorkshire & Humber has played an instrumental role in helping the company with initial adoption and spread. Our partnership with DigiBete began seven years ago, and since then we have continued to support them with the expertise and guidance to navigate the complex healthcare innovation and regulatory landscape. One of the key drivers has been our Propel@YH digital health accelerator, which has been instrumental in providing the resources and guidance to help the company to grow and develop successfully.

How have we been involved?

The DigiBete journey accelerated when they enrolled on our Propel@YH programme which supports organisations from across the world to bring their innovative digital health solutions to the region's patients and the wider health economy. DigiBete was one of six companies who were successful in their application in 2019.

Through the programme, we provided DigiBete with a tailored package of support to help with their development, including close collaboration with our team to build the evidence base for their product. The company was offered guidance, with focused and comprehensive sessions providing plenty of the information required regarding procurement and NHS structures.

They were also signposted to an abundance of high-quality networking opportunities and introductions to support the development of the product. As part of the programme, we supported DigiBete in agreeing funding for an independent evaluation of their service.

Since then we have continued to support DigiBete with scaling their technology, helping them to expand their reach from a small local authority to a national landscape, and now beyond into the international market.

“The Propel@YH programme has been a timely and incredibly helpful resource for our company. This was just before we were commissioned by the NHS, which meant that by the time

we were commissioned centrally, we were compliant with Digital Technology Assessment Criteria and well-versed in the regulatory landscape required for our product.”

– Maddie Julian



**Maddie Julian,
Chief Executive of DigiBete**



Impacts and outcomes of our support

DigiBete has secured a range of new research collaborations since the start of the programme and directly attributed one of these collaborations to taking part in Propel@YH. This involved the successful development of the 'Academy' diabetes training platform for healthcare professionals, working with a major diabetes technology company and national diabetes organisations.

Digibete has also developed new digital health products and services during that time with one of these being a direct result of being on the Propel@YH programme. These include the Type 1 diabetes and Type 2 diabetes platforms and apps and a digital school care plan, working with central NHS Diabetes Programme leads and

the National Children and Young People's Diabetes Network.

DigiBete founder Maddie Julian has also recently graduated from the NHS Innovation Accelerator (NIA) Programme which has proven fruitful in consolidating learning and helping the company to develop further important contacts.

What began as a small partnership with the Leeds Children's Hospital has now expanded to over 230 clinics using DigiBete's innovative digital health solution nationally, serving 75% of patients and families in the UK diagnosed with Type 1 diabetes.

"We've grown with Health Innovation Yorkshire & Humber. They've been there from the start of our journey, and I know we can contact them and ask for support as and when we need it, the advice is always there as required. They've been an excellent sounding board."

What's next?

DigiBete aims to further expand its offer and digital resources and bring continued benefits not only to families with children who have Type 1 diabetes but to the clinicians who support them, including through the development of training courses around diabetes. Responding to demand from clinicians and the NHS, DigiBete has also now developed and started to roll out similar resources for the smaller but important Type 2 diabetes children and young people population.

The company is now gearing up for international expansion, and Health Innovation Yorkshire & Humber is playing a crucial role in helping them navigate this new phase of growth, ensuring their platform reaches its full potential and brings benefits to families around the world.

"Partnering with Health Innovation Yorkshire & Humber has been a game-changer for us. They've provided quick access to valuable support and connections – a bit like a dating agency – matching us with the right expertise and support we need. Their strong network and connections enable companies like ours to benefit greatly from their support. I would highly recommend other companies to explore this opportunity and tap into the expertise that Health Innovation Yorkshire & Humber has to offer."



Using Artificial Intelligence to triage primary care patients

While our core role is to help identify the right solutions for our health and care systems to meet the needs of our communities, we also work hard to evidence the benefits and impacts of new services or products through real world evaluations. Sophie Bates, Workstream Lead for Commercial Support and Economic Growth explains how we have done this for one innovator company and their NHS partners.

Klinik Healthcare Solutions helps GP practices direct patients to the right point of care across the primary care ecosystem with a safe and intuitive patient flow management solution. It provides equitable access through user-friendly AI triage and online consultations in combination with a dedicated telephone module.



**Sophie Bates,
Workstream Lead**





Its clinically supervised algorithm and intelligent patient flow technology provides urgency and priority detection to ensure all queries are dealt with safely. This helps reduce the burden on GPs, provides holistic patient management for the practice and delivers a more satisfying patient experience.

We have worked with Klinik for several years helping with the rollout of their solution across Primary Care Networks (PCNs) in our region. Last year we co-funded a health economic analysis of their technology working with York Health Economic Consortium (YHEC) to utilise data from its deployment at the Priory Medical Group, a large PCN in York.

Priory Medical Group's success story

Klinik was implemented at Priory Medical Group as they were experiencing significant demand for GP appointments across their nine sites.

Following implementation, we commissioned YHEC to undertake a health economic evaluation of the technology to demonstrate its impact. The results showed significant cost and efficiency savings including:

- Cost savings of £300,000 across the PCN



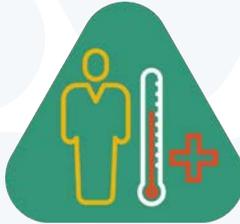
Watch the video to find out more about how Klinik's primary care triage system helped Priory Medical Group to reduce patient telephone calls to their practices and make operational cost savings of £300k.

Impact of Klinik across Priory Medical Group

£300k
saved across the Primary Care Network



6%
reduction in appointments not attended



20%
reduction in tasks



for reception, pharmacy and clinical staff



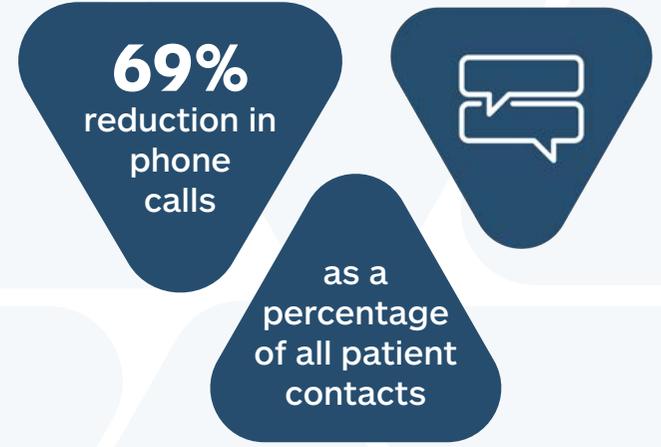
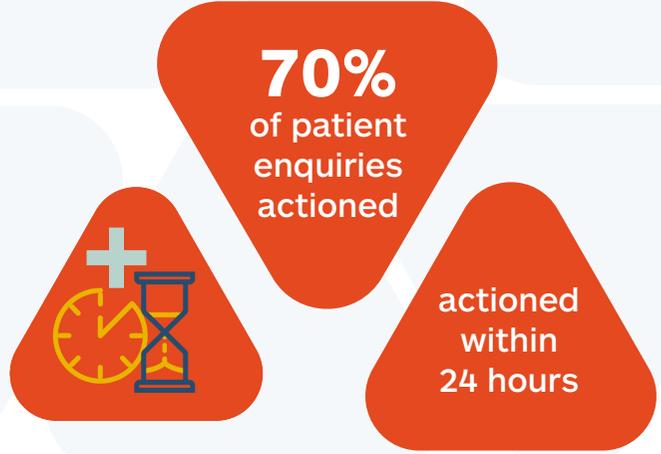
- Increased utilisation of nurse clinical sessions, pharmacy appointments and MSK practitioners
- Reductions in the average cost per consultation
- A 6% reduction in appointments not attended
- 20% reduction in tasks across reception staff, pharmacists and clinicians
- 83% of staff felt patient queries being directed to right place quickly a bit or much better
- 94% of prescription requests are made online and processed within 48 hours
- 70% of patients' enquiries actioned within 24 hours
- Phone calls went from 99% to 30% of all contacts releasing capacity so that phones are answered within 5 minutes, compared with up to 30 minutes previously

- Reductions in the use of NHS111 slots as more cases answered by the practice.

We supported the dissemination of these findings by holding an event, which was attended by 100 delegates from across the NHS and the Health Innovation Network. Klinik was subsequently short-listed in the 'One to Watch' category at the Medilink North of England Healthcare Business Awards.

We continue to support Klinik with its ongoing adoption and spread strategy, both in the Yorkshire and Humber region, and further afield.

Impact of Klinik across Priory Medical Group





Innovation Hubs – a model for adoption and spread

A key priority for us over the last five years has been to forge strong partnerships with the three Integrated Care Systems (ICS) in our region and we have developed a unique approach to this via our Innovation Hub model, now live in two of our ICSs. This approach was given as an example of best practice in the [Hewitt Review](#) and used as an exemplar case study by the [NHS Accelerated Access Collaborative \(AAC\)](#). The Innovations Hubs, which are bespoke to our systems' structures and needs, are essential to enabling innovation, collaborative working and research to flourish at a provider, system, and partner level. They provide a single point of contact for innovation enquiries within each system, this not only improves the process of highlighting innovation opportunities to systems in our region, but also allows them to allocate funding and capacity to the innovation opportunities which will have the greatest impact across systems as a whole.

Innovation Hub Directors Sarah Dew and Amy Lochtie provide more information about the work of and future plans for our Innovation Hubs in South and West Yorkshire.



**Sarah Dew,
Innovation Hub
Director for South
Yorkshire**



**Amy Lochtie,
Innovation Hub
Director for West
Yorkshire**



South Yorkshire Innovation Hub

Established in 2019, the South Yorkshire Innovation Hub works across the South Yorkshire Integrated Care System to identify unmet needs where innovative approaches could help to better serve the needs of the population or workforce and secure funding to test and implement these innovations.

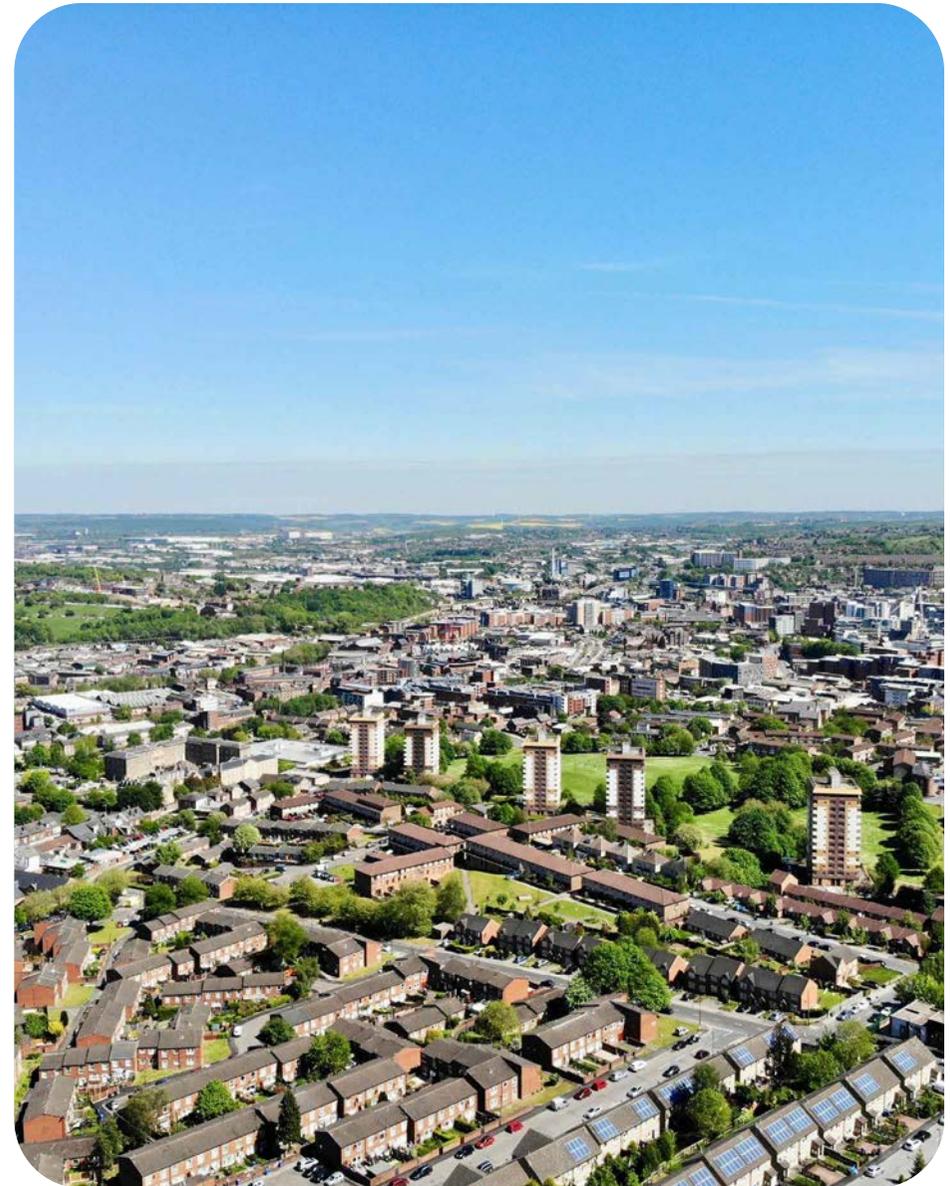
Through the hub, we have been working in collaboration with South Yorkshire to support the South Yorkshire Cancer Alliance to run two editions of the Cancer Innovation Award.

Funding awarded by the South Yorkshire Cancer Alliance of over £100k is helping to progress four innovative projects to improve cancer outcomes for patients in our region. We have provided dedicated project management guidance in developing and delivering the scheme, which involved a competitive application

process with ambitions to test new, innovative ideas to improve cancer diagnosis, care or treatment for patients in the region. The funded projects were:

- Breast Cancer Rapid Diagnosis using AI: The University of Sheffield
- Development of a symptom tracker app: Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust
- Increased accessibility of physical activity for children: Sheffield Children's Hospital NHS Foundation Trust
- Evaluation of face-to-face vs. virtual supervised exercise rehabilitation: Sheffield Hallam University (Advanced Wellbeing Research Centre).

Following the success to date, applications reopened in November 2022 for the second scheme. Six applications were received, bidding for grants of £10-£25k. Three applications





were shortlisted and all three are being awarded funding to commence April 2023, with grant agreements in development.

The hub has also tested the role of Cognitive Behavioural Therapy (CBT) to help manage respiratory conditions, by training healthcare professionals to deliver CBT to patients. The evaluation demonstrated that it has resulted in a reduction in referrals to Improving Access to Psychological Therapies (IAPT). 30 healthcare professionals across South Yorkshire received CBT training to use as a novel element of care for patients living with respiratory conditions. In the evaluation of the project, trainees were very positive about the training and the relevance to their job roles, given the number of patients experiencing anxiety. They reported feeling better skilled and more confident in supporting these patients.

Those interviewed as part of the evaluation also reported a measurable positive impact on

patients' anxiety, as evidenced in before and after surveys.

They also suggested that the programme led to a reduction in referrals for patients to IAPT and counselling services. They felt better able to support their own patients rather than referring them on straight away. Where they did still refer, they were able to provide more information to the service they were referring to, based on insight gained through using CBT.

The success of the hub model in South Yorkshire has led to the approach being replicated in West Yorkshire, and collaboration between the hubs helps us promote sharing across the systems.

West Yorkshire Innovation Hub

The West Yorkshire Innovation Hub was set up in 2022 to provide a home for system innovation in West Yorkshire. The hub is ideally placed within West Yorkshire Health Care Partnership's (WYHCP) governance structure and uses Health Innovation Yorkshire & Humber to act as a neutral partner to spread and adopt good practice across the region. By being embedded within the ICS, the hub team has the ability to evolve and adapt to system needs, to help identify the system's innovation requirements, act as a front door for innovators and support the development of networks which promote the spread and adoption of best practice.

The hub enables innovative ways of working to tackle the biggest challenges facing the local system. The connections and networks made by the hub, position it as the first port of call for anyone seeking support or exploring opportunities for innovation and improvement against WYHCP priorities across the health and care system. The hub's successes in its first year, include work with the West Yorkshire Cancer Alliance has been highlighted as an area of best practice for collaboration between an ICS, Cancer Alliance and local health innovation network provider, and is being showcased to NHS England with a view to the potential spread and adoption of this approach.

The extensive engagement approach with primary care, patients and public by the Primary Care Innovation Collaborative to understand the unmet needs within primary care has been utilised by other Digital Primary Care Innovation Hubs as best practice.



The work we have undertaken with Mid-Yorkshire Clinicians to address myths around asthma in South Asian communities was shortlisted for a HSJ Partnership Award. You can read more about this on [page 29](#).

The hub is currently working with WYHCP and the Yorkshire Ambulance Service to reduce avoidable ambulance conveyancing. Deprivation is a leading contributor to poor health outcomes, and this is being highlighted by the rates of ambulance call outs in areas of high deprivation. Working with partners from across the system, this project ensures the people in the most vulnerable parts of society are having their needs met by the right service. Using data from this project, we are able to understand the nature of the calls and use local intervention to direct to patients to the correct pathway. This work has gained national interest and has the potential to influence policy.





Humber and North Yorkshire Digital Primary Care Innovation Hub

Ellen Barnes, explains how we have been working in partnership with the Humber and North Yorkshire Health and Care Partnership and NHS England Digital Primary Care North East and Yorkshire to help establish the a new hub which aims to accelerate the uptake of digital solutions within primary care, including pharmacy, optometry and dentistry specialities.



**Ellen Barnes,
Digital Primary Care
Innovation Hub Lead**

The key priority of the hub is to embed the use of digital to improve the way services are designed, delivered and managed in an integrated way, with a clear focus on the individual and their experience. It also helps health and care professionals make the best decisions because they have the information they need, at the point of care when they need it.

The hub optimises the value of data to create intelligence to improve patient safety, deliver better health outcomes and tackle inequalities. It is staffed with a dedicated Innovation Lead who is integrated into the primary care and digital ecosystem within Humber and North Yorkshire. Our goal is to research, evaluate, identify and support clinical and non-clinical unmet needs, aligned to the ICS's digital strategy and primary care strategic priorities. We provide support and expertise to the project through work such as the creation of a digital innovation network and creating a digital innovation exchange

as a reference point and repository to promote the adoption of innovation and best practice.

As part of the plans to identify unmet needs, our first virtual innovation workshop was held last October. Twenty-five attendees provided responses to questions based on the challenges, enablers, priorities, themes and support needed. We had representation and input from a variety of roles within primary care and it was an excellent starting point to identify needs the hub can support. Further events are being considered at place level to identify place specific unmet needs.

Looking ahead, we are working with key stakeholders to scope out innovation workshops across the region which would address health inequalities in some of the most deprived areas for some specific marginalised patient groups. With bursary funding from NHS England's Digital First Primary Care team, the hub will identify and fund a handful of digital pilot projects within primary care. These pilots will align to regional and place level unmet needs, the digital strategy, Core20PLUS5 and the four primary care collaborative workstreams: access, workforce, population health inequalities, learning and scaling-up, which were agreed following the [Fuller Stocktake report 2022](#).

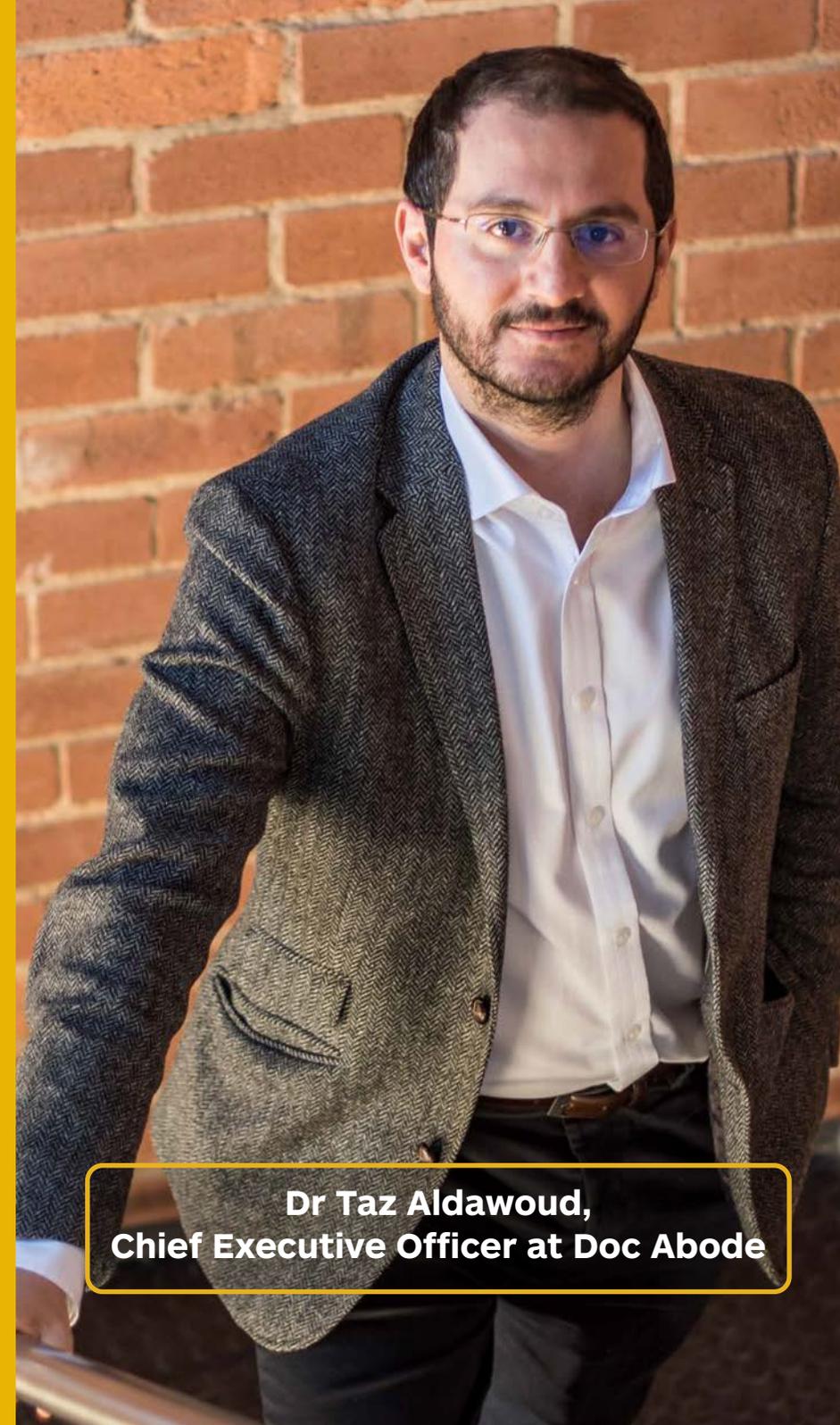


Innovator Spotlight: Doc Abode

Doc Abode is a rapidly growing health tech company helping the NHS to work differently, building solutions that enable an NHS workforce fit for the future, and providing better care for NHS patients. The company was founded in 2016 by Dr Taz Aldawoud, an entrepreneurial GP who has also held a range of regional and national roles in the NHS. We spoke to Taz about how Doc Abode was created to improve workforce capacity and cut the time patients were waiting for out-of-hours home visits.

Through the multi-award-winning Doc Abode platform, healthcare providers are able to improve the day-to-day efficiency of their available workforce. The platform matches NHS patient requirements to the most relevant available clinicians based on attributes such as expertise and language, promoting more personalised delivery of care.

Health Innovation Yorkshire & Humber has been instrumental in supporting Doc Abode from the beginning of their innovation journey, from proof-of-concept development through to gathering real-world evidence to support the scale up and spread of their technology in the North of England and further afield.



**Dr Taz Aldawoud,
Chief Executive Officer at Doc Abode**



As the company has grown and developed, Health Innovation Yorkshire & Humber has continued to play a key role in supporting the company to navigate the nuances of the healthcare system.

“Everyone remembers us being the ‘Uber for doctors’ back when we started, initially just for GPs in urgent care. But our business has evolved greatly since then. Health Innovation Yorkshire & Humber provided us with a software tool for scenario modelling. That put us in a really great position, allowing us to understand if doctors are up for new ways of working, and how we can prove this in the quickest, most cost-efficient way to see if there’s a viable business there? That gave us the foothold to be up and running.”

– Taz Aldawoud

How have we been involved?

In 2016, we supported the development of Doc Abode through our Proof of Concept programme, which nurtured

new ideas and technologies through regulatory compliance guidance and marketplace analysis.

We then supported further development with a successful application to the Small Business Research Initiative (SBRI) Healthcare’s GP of the Future project. This provided intensive support as part of the Office of Life Sciences-funded Innovation Exchange to help Doc Abode prepare to market itself.

We have continued to support Doc Abode to evaluate and scale their technology, including through the inaugural Digital Health North Accelerator in 2020, to facilitate adoption and spread across the whole of the North of England.

The advent of COVID-19 was particularly challenging, as there was a need for practices to have systems in place to triage and prioritise home visits. As the company has evolved and developed, we have continued to play an instrumental role in helping them to build their credentials as a supplier to the NHS.

Impacts and outcomes of our support

The funding from the Proof of Concept programme helped Doc Abode to run surveys and focus groups covering over 70 GPs and to launch a feasibility pilot. This provided strong evidence to suggest that the Doc Abode system was indeed capable of attracting a workforce interested in trying new ways of working.

Through Health Innovation Yorkshire & Humber, the company successfully applied to Innovate UK’s SBRI initiative. An award of £100k was made to facilitate the development of a prototype version of the Doc Abode product which was successfully trialled in Leeds and Huddersfield through a partner organisation, West Yorkshire’s GP out-of-hours provider, Local Care Direct.

The Health Innovation Network’s Digital Health North Accelerator provided further support for the company with business case and value proposition reviews, as well as assisting introductions and conversations with potential NHS



customers across the North. The programme arranged tailored digital events between January and March 2020 to help the company showcase their technology.

“We had proved our technology was valuable, but it needed some serious funding to take it to the next stage. Again, that’s where Health Innovation Yorkshire & Humber came in. With their support, we successfully applied to SBRI Healthcare’s GP of the Future project. This went into creating the architecture for our technology to be a scalable solution. In 2019, we had a product ready to go to market.

“Health Innovation Yorkshire & Humber facilitated with

introduction, the engagement, getting the commissioners on board, working with the provider and the academics to get all of it off the ground. In late summer 2019, it was being deployed and growing organically in West Yorkshire.”

The COVID-19 pandemic has also meant that the company has had to adapt its model. By the end of 2020, Doc Abode was starting looking into how to coordinate vaccinators to fulfil housebound COVID-19 vaccines. Throughout this next phase, Health Innovation Yorkshire & Humber supported the company to build its vaccine module and showcase their technology to key decision-makers in the North of England and beyond.





Tackling climate change to improve our health system

The climate crisis is a health emergency and in response, the NHS is the world's first health service to commit to delivering net zero carbon emissions. Net zero refers to balancing the amount of carbon gases we emit into the atmosphere with the amount removed, slowing down the rate at which the climate is changing. In this section, our Deputy Chief Executive, Kathy Scott, explains why investing in the green agenda can make a difference to population health.

We are proud to lead the Health Innovation Network activity supporting the NHS to meet its net zero targets through identifying and supporting innovations that make a difference to the NHS. We are also supporting our local systems working with the Integrated Care Board (ICB) and trust net zero leads to understand how innovative ways of working, technology and products can support their ambitions.



**Kathy Scott,
Deputy Chief Executive**





Rewarding good practice

The SENTINEL PLUS project continues to make a difference to those suffering with asthma ([page 29](#)) whilst also reducing the carbon footprint associated with reliever inhaler (often known as blue inhalers) use. The project was named the Environmental Sustainability Project of the Year at this year's HSJ Partnership Awards. There are now 305 Primary Care Networks signed up to SENTINEL PLUS throughout England helping to further reduce the environmental impact of blue inhalers. In our region prescriptions of blue inhalers have been reduced by 44,275 saving over 1,240 metric tonnes of eCO2 emissions.

Working in partnership with Humber and North Yorkshire Health and Care Partnership, we recently announced the winners of their Sheep Shed Green Award programme. The awards promote sustainable practice within the Humber and North Yorkshire region and help progress carbon

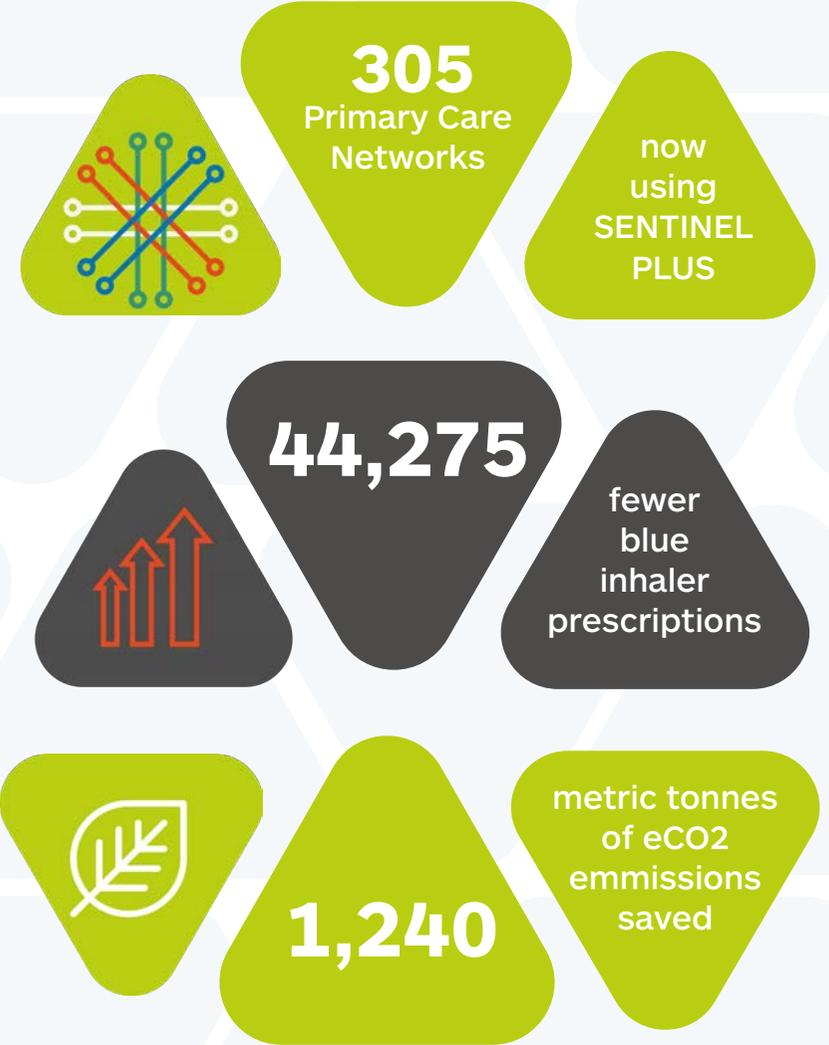
reduction projects which have been identified by staff into action.

This programme is a great opportunity to showcase innovative practice across the ICB footprint. Each of the winners has demonstrated how simple changes will continue to support the delivery of high-quality patient centred care whilst protecting the environment and NHS resources for future generations.

The award offered to each applicant is tailored to the innovative project with up to £50,000 available to support the ideas.

This year's winners include initiatives that power vehicles with used cooking oil, the recycling of medicinal waste products and a food waste recycling system.

Spread and environmental impact of the SENTINEL PLUS programme

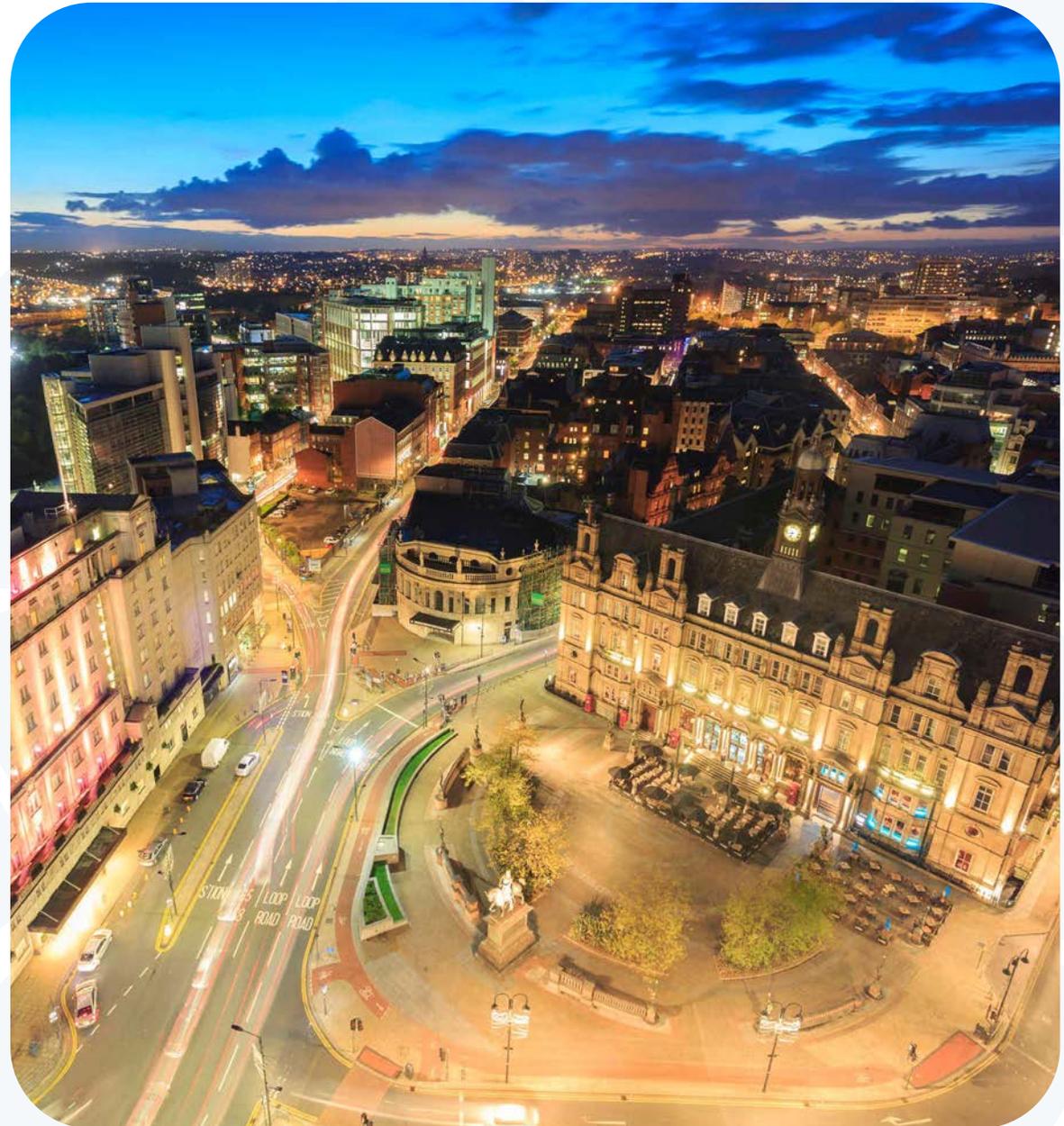




Sharing sustainability good practice

We continue to run our Sustainability Support Programme alongside our partners Hill Dickinson to help small businesses with an interest in supplying the NHS increase their understanding of sustainability requirements within the healthcare sector. January saw the launch event and the second event in the series took place in March with a focus on sustainable procurement, including healthcare supply chains, carbon reduction plans and social value criteria.

Following the NHS' ambitious commitment to become net zero by 2040, NHS England has funded several innovation programmes, all of which are required to consider environmental sustainability as part of their selection criteria. We were commissioned by NHS England to explore innovators' experiences of applying for innovation programmes with a focus on net zero. We have created a report and further guidance alongside NHS England's Accelerated Access Collaborative. The report compiles feedback obtained from SME interviews which were conducted with innovators involved in NHS England programmes. Based on feedback from innovators, the report sets out actionable insight themes for NHS England's consideration when developing its offer of support to innovators on net zero healthcare. The guidance takes a more focused look at advice for organisations with greener NHS aspirations.





Health Innovation
Yorkshire & Humber

Website: www.healthinnovationyh.org.uk

Email: info@yhahsn.com

Address: **Health Innovation Yorkshire & Humber**
Unit 1, Calder Close
Calder Park
Wakefield
WF4 3BA

Telephone: **01924 664 506**



[Sign up to receive updates](#)

