



Yorkshire
& Humber
AHSN

Transforming Lives Through Innovation

Impact Report 2021-22



Part of
The AHSN Network



Introduction

The healthcare sector continues to be a highly dynamic and challenging environment as the COVID-19 pandemic continues to impact. As we turn our focus to the emerging priorities for our Integrated Care Systems (ICS), soon to become Integrated Care Boards (ICBs), it is clear that innovation is still essential in helping the sector to recover and prepare for the future.

Over the last four years, our priority has been to forge strong partnerships with the three ICSs in our region and we have taken a unique approach through the development of our Innovation Hubs. Our South Yorkshire Innovation Hub has now been established for three years ([see page 40](#)) and this year we launched a new Innovation Hub for West Yorkshire, tailored to meet their needs and priorities. We are also developing plans for a potential third hub with Humber and North Yorkshire Health and Care Partnership.

This model of working embeds AHSN staff into the fibre of health and care delivery in our region, enabling us to gain a deep understanding of needs right across our health and care systems at every level. This means we are able to co-design and deliver effective solutions to what we have identified as the five critical challenges that are common to our partners across the region. These are:

- Supporting the NHS's post-pandemic recovery
- Advocating for levelling-up as a driver for inclusive economic growth
- Addressing health inequalities
- Improving equality, diversity, and inclusion
- Acting against climate change

These challenges also align with the priorities outlined in NHS England and NHS Improvement's Operational and Planning Guidance and the Government's Life Sciences Vision, both published in late 2021.

Over the last year, we have supported our region with innovation implementation to address post-pandemic recovery. Our work



Dr Tim Ferris, National Director of Transformation at NHS England and NHS Improvement, reflects on his visit to Yorkshire & Humber AHSN in December 2021

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to roll-out remote monitoring solutions across the region for example, has helped over 2,000 patients avoid unnecessary hospital admissions, thereby easing the workload for frontline staff ([see page 12](#)). And our work to spread FeNO machines across the region has resulted in over 11,000 additional patients being diagnosed with asthma that is now under control, improving their quality of life and reducing their reliance on the healthcare system ([see page 23](#)).

A prosperous economy leads to improved health outcomes and we have played a significant role in supporting not just the health recovery but also economic renewal at a local, regional, and national level through our YHealth for Growth campaign and work to support health innovators. For example, our digital health accelerator – Propel@YH – last year supported 10 companies and generated £55k of investment into the region's economy. The Propel@YH programme has diversified significantly to support green innovations and international businesses and you can find out more about how we have achieved this on [page 34](#).

Our partnership with the Department of International Trade and the Association of British HealthTech Industries has also seen us work with 150 global healthcare SMEs from 10 countries that are looking to enter the UK healthcare market through a series of highly successful events. This important work brings much needed health innovations for our health systems as well investment opportunities for the regional economy ([see page 44](#)).

The Government's 'Levelling-Up' agenda is a key driver for inclusive economic growth in our region and the 2022 publication of the Levelling-Up White Paper and its 'missions'

complements our ongoing work in this space. It also aligns with our belief that we, as a system, need to be better at engaging with the private sector in recognising the significant role they can play in driving economic growth, and to create place-based approaches to make improvements to population health and wellbeing. Our involvement in this year's Convention of the North summit with NP11 – the collective voice for all 11 Local Enterprise Partnerships (LEP) in the North of England – gave us another platform to advocate for the region's thriving life



Matt Whitty, Director of Innovation, Research and Life Sciences at NHS England and NHS Improvement and Chief Executive Officer for the Accelerated Access Collaborative, talks about his visit to Yorkshire & Humber AHSN in December 2021

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sciences sector, which has the assets, skills, momentum, and innovation to drive Levelling Up not only for the North, but to benefit the whole of the UK.

The themes and 'missions' within the Levelling-Up White Paper further promotes the growing focus on population health management and the role it can play in addressing health inequalities: something which was also identified as a priority within the 2022-23 NHS Operational Planning Guidance and is also a key area of focus for our regional health and care partners.

Population health management has been high on our agenda for several years and our evolving health inequalities strategy demonstrates our commitment to accelerating the adoption and spread of products and services that improve access to, and achieve more equitable, health and care. Addressing health inequalities is a theme that runs right through our portfolio of work and in partnership with local and national stakeholders, we are already creating the right collaborations and opportunities to lead initiatives and projects that deliver this vital agenda.

At a national level, we are [working with NHS England and NHS Improvement's Health Inequalities team](#) to showcase how innovation plays an essential part in supporting population health management through programmes such as [Core20PLUS5](#).

We also secured funding from the Department of Business, Energy, and Industrial Strategy's 'Regulators Pioneer Fund' to work in partnership with the Care Quality Commission [to create a roadmap that will help GPs to develop and evidence innovative projects that reduce health inequalities, particularly in the most deprived areas](#).

As an example of how our health inequalities strategy permeates throughout all our local work, we are supporting our ICSs to tackle cardiovascular disease (CVD) as part of their population management approach through several initiatives including Healthy Hearts and the AHSN Network's national Lipids Optimisation and Blood Pressure Optimisation programmes. As a major driver of health inequalities, CVD accounts for a quarter of the life expectancy gap between deprived and affluent communities. You can read about this project on [page 62](#).



Rob Webster, CEO Lead for West Yorkshire Health and Care Partnership, explains how Yorkshire & Humber AHSN is helping to support the growth, adoption and success of innovation in West Yorkshire

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But to tackle health inequalities effectively and ensure equity of access to health and care services for all, we must also understand the importance of diversity within health innovation. Greater diversity and inclusion within the innovation pipeline leads to more successful innovation. The NHS has a hugely diverse workforce and through our AHSN's leadership, we are working to ensure this innovation pipeline has a broader set of inputs that is representative and reflective of the staff and communities it serves. After creating and leading on the publication of the AHSN Network's first [Diversity in Innovation](#) report in 2019, we are now working on a follow-up report which will reflect on progress against the pledges introduced in 2019 and what we have learnt so far.

We know from experience that innovation is critical in enabling us all to do things differently, and that includes helping to tackle the climate crisis. Over the last 12 months we have been able to initiate a range of programmes that support the NHS ambition to having 'net zero' emissions by 2040. The Propel@YH Net Zero sustainable health accelerator ([see page 8](#)) has enabled us to bring green innovations into the region. We have also been working with the NHS and industry on an award-winning initiative to improve care for asthma patients and reduce the environmental harm caused by blue inhalers. We estimate that the SENTINEL programme has already saved the equivalent of 571 trans-Atlantic flights worth of CO2 emissions. You can find out more about this programme on [page 23](#).

This Impact Report provides further details on the programmes and initiatives we have supported this year. All our work is focused on finding, developing, and supporting the spread of

healthcare innovations that improve lives, reduce costs to our healthcare system, and drive economic growth. We would like to thank all our staff as well as our partners and stakeholders in the NHS, industry and academia for collaborating with us to aim to create a thriving and innovative healthcare system that meets the evolving needs of the population.

Richard Stubbs,
Chief Executive Officer and
Vice Chair of the AHSN Network



Professor William Pope,
Chair

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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 appears in this document we estimate that:



More than
207k
patients
benefitted

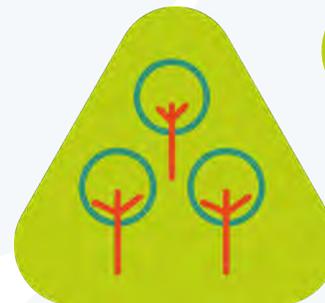
from
better,
safer care or
experienced
improved health
outcomes



£22m
new
investment

related
to
healthcare and
technological
innovation

was
brought into
our
region



457
metric tonnes

of CO₂e
emissions
have been
offset



Acting against climate change

If we continue to do the same things, we'll get the same results. Innovation is critical in enabling us all to do things differently and can help tackle the climate crisis. Deputy Chief Executive, Kathy Scott, talks about how we use our unique position between the NHS and industry to horizon scan and identify evidenced-based, green solutions that can support the NHS' Net Zero targets and reduce environmental impact.

Towards the end of 2021, world leaders gathered in Glasgow for [COP26](#), a meeting described as the last chance to act to save the planet. Whilst we joined the online conversations as an organisation during the two-week event, we have been working hard over the last year to show that you don't need to be part of a conference of that scale to make a difference.

We can all contribute to the green agenda, and as the national sustainability lead for the AHSN Network, the Yorkshire & Humber AHSN is committed to its role in identifying and spreading environmentally sustainable healthcare innovations.



**Kathy Scott,
Deputy Chief Executive**





As the biggest employer in Britain, the NHS contributes to the equivalent of 4% of England’s total carbon footprint. The effects of climate change caused by carbon emissions such as air pollution, increasing allergens, extreme heat and water quality impacts, to name but a few, can exacerbate long-term conditions and lead to poor mental and physical health.

Sharing learning

The NHS has the power to use innovative solutions to tackle existing sustainability issues and concerns. Industry and innovators can also work to consider and build sustainability into innovation concepts and products, to help us work towards net zero carbon emissions.

We have heard some of these solutions over the past year as we hosted a series of sharing and learning events on behalf of the AHSN Network’s Environmental Sustainability Community of Interest, which seeks to share best practice innovations and initiatives to support the delivery of a Net Zero NHS.

The virtual events explored topics such as: national ambitions and strategies, reducing the carbon impact of anaesthetic gases and reducing the environmental impact of asthma inhalers. All three events were attended by a total of 564 people with the event recordings attracting 628 views.

According to the follow-up survey after the last event, 100% of those who completed it said they had learned something from attending.

Our ‘green’ accelerator

In April 2021, we launched Propel@YH Net Zero (see page 34), a new sustainable health accelerator pilot programme commissioned by West Yorkshire Health and Care Partnership for Small and Medium Enterprises (SMEs) who either have new innovations that can support the NHS’ drive towards ‘net zero,’ or who have existing products that can be made more sustainable.

Three companies took part in the three-month programme, that provided bespoke guidance and support services to enable them to

Impact of reducing inhaler emissions

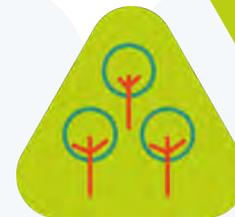
Prescriptions of blue inhalers reduced by over

16,000
units



Over **457**
metric tonnes

of CO2e emissions have been offset



Equivalent to more than **571** transatlantic flights



bring their green innovations into our region and provide them with the platforms to introduce them into the health and care system.

Sustainable innovations that also benefit patients

Our award-winning work with the NHS in Hull, and AstraZeneca on the SENTINEL programme, helped to reduce the reliance on, and prescribing of, blue ‘reliever’ inhalers for asthma sufferers and the greenhouse gas emissions they produce.

Data from the first six Primary Care Networks involved in the programme has shown a reduction in blue inhaler prescribing by nearly 16,038 units since starting the programme, equating to an offset of almost 457,000kg CO2e emissions (equivalent to more than 571 transatlantic flights). This number continues to rise, month by month. You can find more detail on this project on [page 23](#) of this report.

An example of innovation that has a side benefit of supporting a reduction in emissions is our work

with TytoCare across the Yorkshire and Humber footprint. TytoCare is a handheld medical device given to the patient to use at home. It reduces the need for face-to-face appointments in a clinical setting and therefore cuts travel and associated carbon emissions.

From April to December 2021, the pilot TytoCare projects that we helped to establish in trusts across the region saved a total of 51 visits to GP practices and emergency departments, as well as acute ward admissions, which equates to 414kg of CO2e emissions saved and 1,500 miles of travel avoided.

You can find out how TytoCare is being rolled out across the region in a variety of different care settings on [page 15](#).

Engaging our stakeholders

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 AHSN 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.

Impact of TytoCare pilots on travel to care settings



51
GP and A&E
visits avoided
by
patients

414 kg
CO2e emissions
offset

1,500 miles
of travel
avoided



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 (ICS).

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.



It's vital that any new health and social care technologies contribute to our obligation to reduce our environmental impact. By highlighting this early on in the marketing of any product, we can be sure that we're doing the right thing and moving towards sustainability. The Propel@YH Net Zero programme has provided exactly this focus and guidance, to ensure that companies are not taking products to market that are going to quickly become obsolete from an environmental viewpoint. We've enjoyed working with the AHSN on this and have a robust plan to do more in the future."

**Frank Swinton,
Climate Change Lead,
West Yorkshire Health and Care
Partnership**



Transforming care within the home

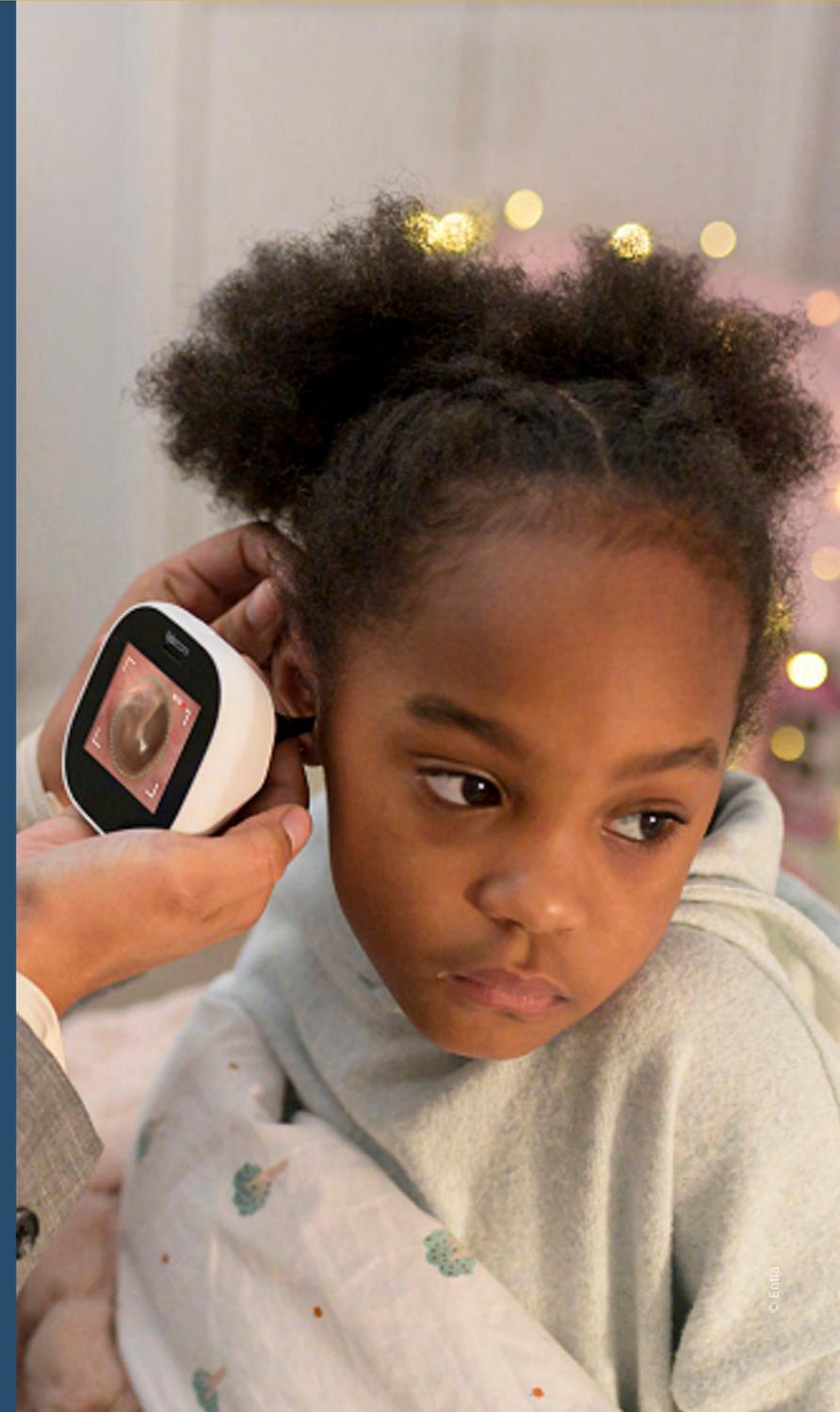
As we learn to live with COVID-19, and our health and care system deals with the aftermath of the pandemic, we know there remains a vital need for robust technology that reduces unnecessary trips to healthcare settings. Our Regional Scaling Programme team, Ellen Barnes, Maria Glover and Nicola Chicken, talk about the three innovations that are keeping patients in our region out of hospital.

Thanks to our region-wide rollout of remote monitoring solutions, 2,113 patients have been benefitting from new technologies that reduce the need for in-person hospital appointments and provide a better overall patient experience, explains Nicola Chicken.

In 2020, NHSX initiated a new Joined-Up Care Programme to build on the digital health gains achieved during the pandemic and accelerate the scale of using digital innovations to transform patient care.



**Nicola Chicken,
Programme Manager**





As part of this programme, the Yorkshire & Humber AHSN has worked closely with the three Integrated Care Systems (ICSs) in our region to identify products that would meet their needs. After supporting them in the procurement of, and funding for, their selected technologies, we have been the driving force behind the adoption and spread of three remote monitoring solutions: TytoCare, Docobo and HealthCall.

A total of 26 pilot projects across 13 organisations have been established across the region, covering a range of care settings including residential and mental health care homes, paediatric and adult care, emergency departments and virtual clinics.

This programme of work has been separated into two workstreams: Virtual Wards and Care Homes.



Three remote monitoring technologies have been rolled out across the region





Virtual Wards

The Virtual Wards workstream has supported the delivery of 289 remote consultations, thereby avoiding 51 appointment attendances (including GP and A&E visits and acute admissions) after we identified products that could help manage the care of patients in their own homes. Ellen Barnes talks about the technologies we have been working with.



**Ellen Barnes,
Programme Manager**

In Harrogate, an 11-year-old respiratory patient with chronic asthma had regular face-to-face outpatient appointments and frequent A&E admissions. When the child’s mother had a medical procedure and was therefore unable to take her child to clinic, they were given a TytoCare handheld remote monitoring device that allowed them to record the child’s condition at home. It was able to detect early signs of exacerbation which were flagged to a respiratory nurse who could provide timely care and advice remotely, avoiding the need for another A&E admission for the patient.

Meanwhile at Sheffield Children’s Hospital, the use of the TytoCare device for one young patient on long-term ventilation and their family has significantly reduced the ‘tiring and difficult’ process of attending a ‘five-minute’ hospital appointment.

It’s examples like these that make us incredibly proud to have launched TytoCare pilot projects with 20 different care teams across

Impact of our Virtual Wards pilots



289
remote consultations

helped patients avoid

51
GP and A&E visits



20
care teams

have launched TytoCare pilot projects



the region, thanks to our work with West Yorkshire Health and Care Partnership, South Yorkshire & Bassetlaw Integrated Care System (ICS) and Humber and North Yorkshire Health and Care Partnership.

This work went on to receive national recognition after being [‘highly commended’ at the 2022 HSJ Partnership Awards.](#)



There are two versions of the device: TytoHome™ is for use in a patient’s home and TytoPro™ is designed for use by professionals in a clinical or community setting.

The wireless TytoHome device allows patients and their families to perform medical examinations anytime, anywhere for the ear, throat, lungs, heart, skin, abdomen and temperature. These examinations can be online, live with a medical

professional or can be recorded by the patient, parent or carer and uploaded to a secure platform for review by clinical teams.

The devices can be used to diagnose a range of acute conditions such as colds, flu, ear infections, bronchitis and sore throats and can also be used to manage chronic conditions such as chronic obstructive pulmonary disease (COPD), high blood pressure, asthma, congestive heart failure and diabetes.

The Yorkshire & Humber AHSN advocated for TytoCare’s device to be included in NHSX’s Joined Up Care Programme after seeing its potential during a pilot project in summer 2020, with the paediatric department at Bradford Teaching Hospitals.



Watch this video to find out more about the first TytoCare pilot in Bradford

“ Our time with our child is so limited that any device which can either keep us out of hospital when she is poorly or means that she can get an instant examination and an immediate plan for treatment makes us feel so reassured and valued.”

Parent of long-term ventilated palliative patient,
Sheffield Children’s Hospital



Digital Care Homes

Our Digital Care Homes work provides greater access to technology, tools and patient information. Maria Glover explains how we are helping to not only improve care for residents but also create more co-ordinated care amongst care home staff and the wider system.



**Maria Glover,
Programme Manager**

The TytoCare device is also being rolled out as part of the Digital Care Homes workstream and has been implemented within four care homes across our region, benefitting 580 patients so far. The improvements made to more 'joined-up' working across care teams has meant patients have received more timely and co-ordinated care and

potentially avoided unnecessary trips to a clinical setting.

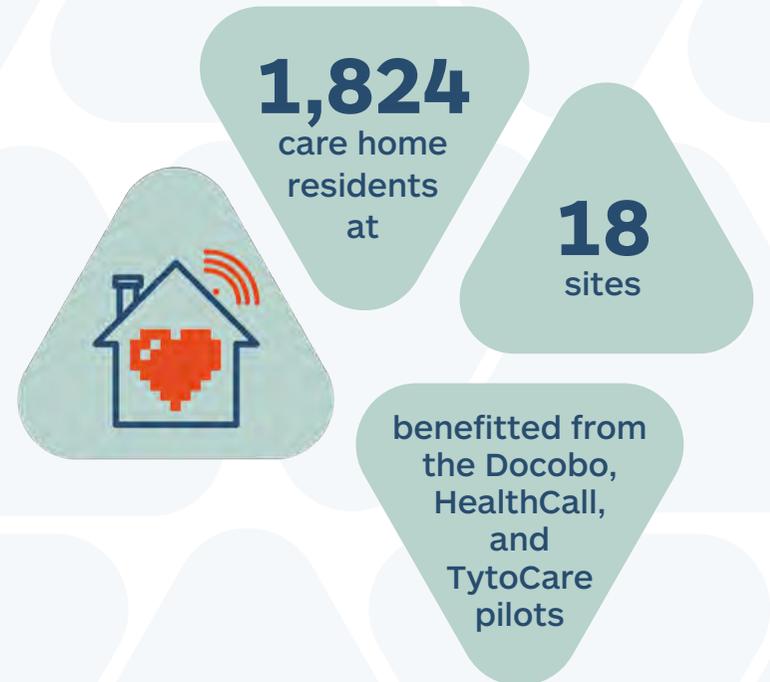
Working with South Yorkshire & Bassetlaw ICS, we are also supporting the implementation of HealthCall's digital application that allows care home staff to refer patient details to an Advanced Nurse Practitioner (ANP), through a secure portal which they can also use to remotely review, triage and refer the resident.

Using the Situation, Background, Assessment and Recommendation (SBAR) tool, staff can provide clinical observations such as blood pressure and oxygen saturation and provide details of their concerns. These observations are used to calculate a National Early Warning Score (NEWS2) which clinicians can analyse and determine the most appropriate next steps for that patient. This not only helps plan care for the patient, but also helps staff prioritise their caseloads. All the information is pulled through into the electronic patient record, making this visible to the wider health system.

After working with Rotherham Clinical Commissioning Group (CCG), six care homes are now using the HealthCall

tool and it has helped 1,082 residents since the sites went live in autumn 2021. This means that residents benefit from a more efficient and well-informed decision on their care and whether they need to be referred on to other health services. Healthcare staff have also reported more effective use of their time and resources, meaning they can spend more time caring for their residents.

Impact of our Digital Care Homes pilots





The Humber and North Yorkshire digital care homes project enables residents to be treated safely within the home where possible. In November 2021, we worked with North Lincolnshire and North East Lincolnshire CCGs to implement DOC@HOME® by Docobo Ltd.

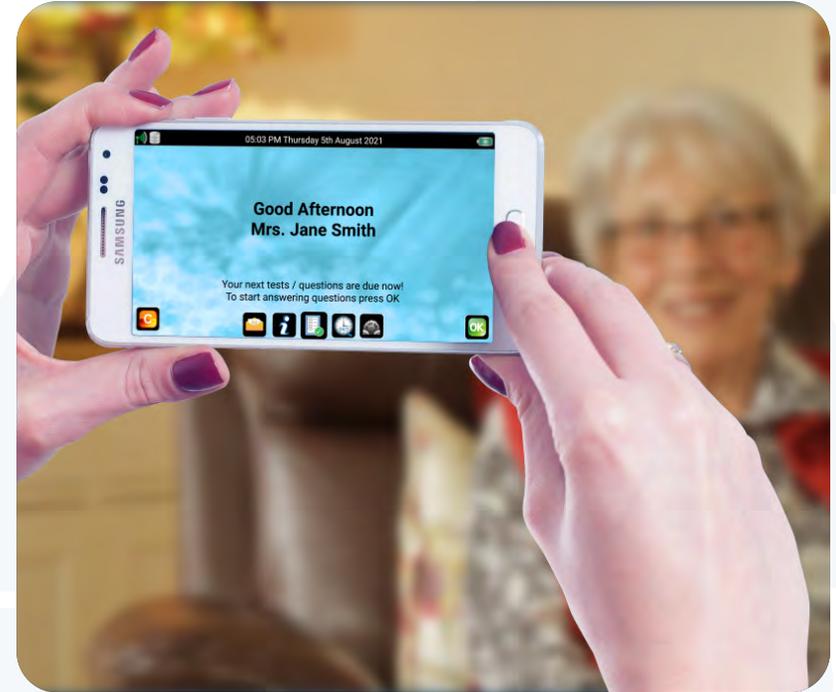
Docobo's secure portal app allows health professionals to create a baseline for every resident's 'normal' condition and monitors for changes that could signify deterioration of any kind, enabling clinicians to act quickly. Care home staff can utilise the app to refer resident details to a dietician, who can review, triage and refer the resident appropriately and effectively.

Three pilot programmes in North Lincolnshire are now underway, utilising Docobo's capabilities of improving the process of communication between health care professionals, with 162 residents benefitting to date, nine of which avoided hospital visits.

Staff using the technology have reported that referrals for dietetics,

for example, have been immediate rather than taking weeks.

In all, the successful implementation of the three remote monitoring devices across our region has been a result of the fantastic partnerships we have with our local ICSs and CCGs. These solutions are creating real benefits in driving improvements to the patient and carer experience, are improving efficiencies of health and social care resources and are helping to reduce the NHS' carbon footprint. We'd like to thank all our partners for their continued support, and we look forward to progressing this work even further.



“Our Digital Care Homes project aims to reduce the admission of residents into hospital, and our partnership with the Yorkshire & Humber AHSN has meant that together, we have been able to identify a solution that can help us to achieve this, whilst maintaining high standards of care for all our patients.”

**Andy Williams,
Interim Chief Digital and Information Officer,
Humber & North Yorkshire Health and Care Partnership**



Driving improvements in population mental health

The NHS Long Term Plan commits to significant investment and a renewed focus to improve and widen access to mental health support for children, young people and adults. Gemma Wright, Programme Lead, provides an insight into how the Yorkshire & Humber AHSN continues to play a key role in the initiation, adoption and spread of technologies and new care pathways that create better mental health for all.

Over the last year, we have been working on a range of projects that seek to tackle issues such as eating disorders and attention deficit hyperactivity disorder (ADHD).

Through this work, we have helped to improve treatment for, and engagement with, young people with eating disorders, and we have contributed to a reduction in assessment waiting times for children with potential ADHD.

Our Programme Manager for this work, Mark Dines-Allen, has been leading work



**Gemma Wright,
Programme Lead**





with stakeholders across the region to drive improvements in care for children and young people through two significant projects.

Tackling eating disorders

FREED stands for ‘First Episode Rapid Early Intervention for Eating Disorders’ and is a service for 16 to 25-year-olds who have had an eating disorder for three years or less.

Young people getting help for their eating disorder through FREED are given rapid access to specialised treatment which pays particular attention to challenges we know young people face during these years of their life, and in the early stages of an eating disorder (ED).

The service was developed and tested by the South London and Maudsley NHS Trust Foundation’s Eating Disorders Unit and King’s College London. When FREED was compared with “treatment as usual”, it reduced the amount of time an eating disorder was left untreated by four to six months, patients waited less time for assessment and treatment, and had better treatment outcomes, and cost-

savings through reduction in day/in-patient treatments were found to be £4,400 per patient.

National implementation of this NHS service has been supported by the AHSN Network. In early 2021, the Yorkshire & Humber AHSN established a FREED task and finish group within the Humber and North Yorkshire (HNY) Health and Care Partnership. The task and finish group was supported by City Health Care Partnership CIC (CHCP), NAViGO CIC as well as the HNY Provider Collaborative. Through the support of this group, CHCP launched their FREED service in August 2021, with NAViGO launching their new service in February 2022. Both services, which were part-funded by the AHSN, have made excellent progress with this innovative pathway and are seeing significant patient benefits such as reduced anxiety towards care as well as a reduction in the levels of disengagement from those needing treatment.

Subsequently, we established a second FREED task and finish group to support the development of FREED services within South Yorkshire and Bassetlaw Integrated Care System



The Yorkshire & Humber AHSN have been an exceptional partner in our journey towards embedding FREED within our service. They have offered us a warm hand to reach for when uncertain of processes or on questions around compliance.

The team have been relentlessly positive and optimistic and gave us all the encouragement we could wish for. Equally important has been their appreciation and respect for what we had to offer and the experience and expertise we brought to the table.”

**Chris Hood,
Chief Executive Officer,
South Yorkshire Eating Disorders
Association**



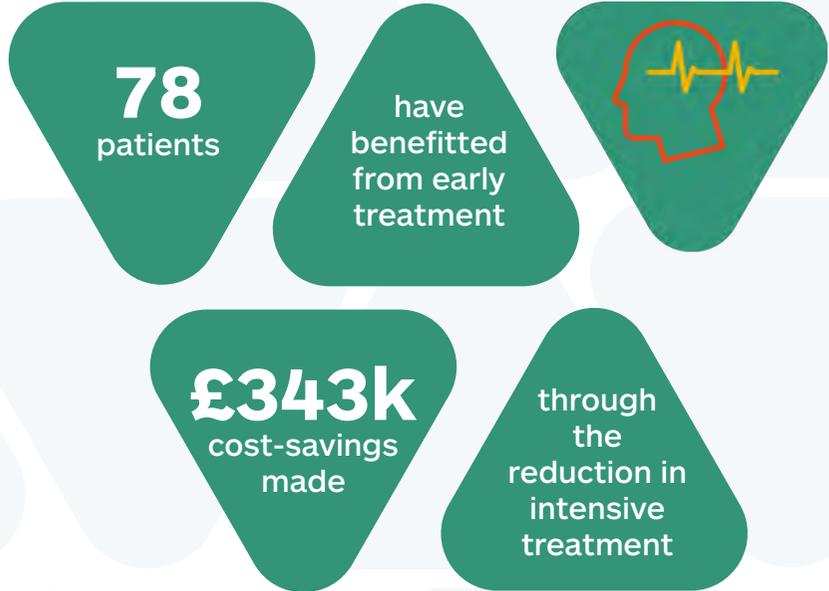
(SYB ICS). In partnership with Sheffield Clinical Commissioning Group, the SYB Provider Collaborative, Sheffield Health and Social Care Partnership NHS Trust (SHSC) and South Yorkshire Eating Disorder Association (SYEDA), considerable progress was made with both SHSC and SYEDA launching their FREED services in March 2022.

Our work to launch these FREED services now means that a total of five providers, covering seven locations within our region, are helping young people to seek early treatment for their eating disorders through this effective

evidenced-based treatment. As a result, 78 patients have benefitted from the FREED service in Yorkshire and the Humber, equating to an estimated cost-saving of £343,200 across the regional healthcare system, thanks to the reduction in intensive treatment.

In addition to providing programme management support and funding for the role of FREED ‘champions’ within the four new services, the AHSN has also hosted a community of practice as well as shared learning sessions across the region.

Patient and system benefits of the FREED programme



“ The support that Evolve have had from the Yorkshire & Humber AHSN to be able to implement FREED has been invaluable. Since going live with FREED, our patients have responded positively to treatment, levels of disengagement have decreased significantly, patients feel more supported and patients’ anxiety about treatment has reduced.

I am extremely grateful and proud to call myself the FREED Champion and would not have been able to do that without the support of the Yorkshire & Humber AHSN and the FREED network.”

**Charlotte Terry,
FREED Champion,
Evolve (Hull Community Eating Disorder Service)**



Focus ADHD

ADHD is a disorder affecting brain development that impacts on the behaviour of around 5% (1 in 20) of school-aged children. ADHD is a treatable disorder but if left undetected and untreated, it can have a significant impact on personal development, academic outcomes, and family interaction.

There is no simple test to determine whether a child has ADHD. The process for diagnosing or ruling it out varies across the country. It will often include multiple steps and is based on clinical judgement informed by subjective reports from parents, teachers, and observation of the patient. Before COVID-19, children were waiting an average of 18 months to obtain an accurate diagnosis. This compares unfavourably with the rest of Europe where the average waiting time to receive a diagnosis is about 11 months, and we can only assume the pandemic will have increased this average diagnosis time.

The Focus ADHD programme uses an objective assessment tool (QbTest) as a supplement, rather than a replacement of conventional clinical examination and subjective assessments and reports. The objective 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.

An evaluation of the use of an objective assessment was commissioned by East Midlands AHSN in 2017 and this demonstrated a reduction of one appointment per child to make a diagnosis, thereby releasing valuable staff resource.

The Yorkshire & Humber AHSN has continued to support the roll-out of the QbTest, which is now in all but one NHS trust in our region and is offered in 12 sites in total, with a further six sites due to go live later in 2022. The remaining trust is due to launch the service later in the year,



Watch this AHSN Network video to find out more about how the Focus ADHD programme is helping to reduce the number of appointments needed to diagnose ADHD

meaning 100% of trusts in our region have committed to taking up the test – one of the first regions outside Manchester to achieve this.

Since Focus ADHD became a national programme for the AHSN Network in April 2020, 2,788 tests have been completed across our region which has made a significant contribution to creating capacity in the system, saving approximately the same number of appointments. Applying the findings from an evaluation by colleagues at East Midlands AHSN, this equates to a non-cash releasing saving of £956,284 having been achieved in Yorkshire and the Humber thanks to QbTest, which equates to £343 per patient.



In the last 12 months, 1,664 tests have been completed in our region equating to cash-releasing savings of £570,752.

The Yorkshire & Humber AHSN has provided project management support and funding to help the spread of this exciting programme

which has subsequently won two HSJ awards, including the HSJ Mental Health Partnership Award in March 2022.

We are incredibly proud of the work we have done in this last year to enable a more rapid diagnosis for children with ADHD, ensuring

patients with eating disorders are being treated early through the FREED programme, as well as working with stakeholders from across the region to transform mental health services and care for the entire Yorkshire and Humber population.

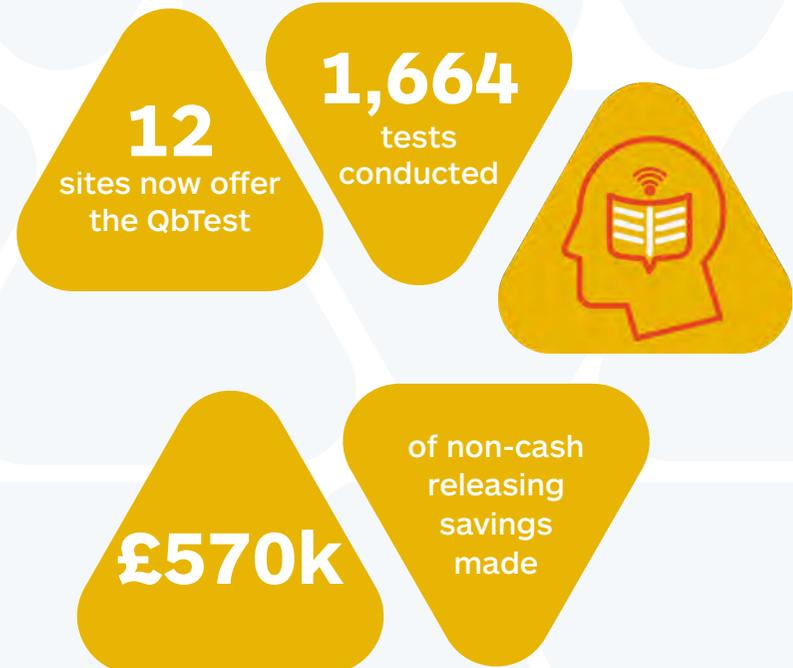


Mark (Yorkshire & Humber AHSN), Jo (Qbtech) and the team have been an invaluable help in our team's QbTest journey so far. Nothing has been too much trouble; all our questions have been answered in detail and they have taken the time to speak to our clinical staff to explain the objective assessment.

As we move towards implementation, I feel assured that we're in good hands. The test itself is an excellent tool and I know our clinicians are excited to have it in their repertoire. I feel that QbTest is going to improve our ADHD pathway and enhance patient experience."

**Emma Foley,
Service Delivery Manager – Community CAMHS,
Sheffield Children's Hospital**

System benefits from the Focus ADHD programme





Breaking down barriers for better asthma care

In Yorkshire and Humber, there is significant variation in access to basic asthma care based on geography, age and ethnicity. In particular, those in disadvantaged socio-economic groups are more likely to be exposed to the causes and triggers of asthma. Programme Manager, Harriet Smith, explains how we are working closely with our NHS colleagues to help improve asthma care for all, while tackling health inequalities and helping reduce the carbon footprint of 'blue inhalers'.

Asthma is common in the UK, with approximately five million people suffering from the condition. In asthma, the airways in the lung become inflamed, leading to symptoms such as breathlessness, coughing, chest tightness and wheezing. Although these symptoms can be mild for some, others find themselves having to take time off school or work, and people are still dying from asthma each year in the UK. Although we have seen advances in treatment, health outcomes associated with asthma have stagnated, and as a country, we now have some of the worst outcomes in Europe.



Harriet Smith
Programme Manager





We are working with the three Integrated Care Systems (ICS) in our region to support their population health management approach. This will help drive improvements in asthma care outcomes and create better access to asthma care for those in deprived communities.

The key to treating asthma is to control the airway inflammation using inhalers that contain a steroid. This kind of inhaler is often called a 'preventer' and needs to be taken every day. Many people with asthma also have a 'blue' inhaler that they use as a 'reliever'. These inhalers relax the muscle around the airways in the lung, temporarily reducing symptoms. Unfortunately, these blue inhalers (known as SABAs) do not treat the inflammation, they only provide short term benefit. Hull is a region with some of the highest SABA inhaler use in the country.

In a bid to try and manage this and improve the health of asthma patients within the Hull region, Dr Michael Crooks (Respiratory Consultant and Senior Lecturer) and colleagues at Hull University Teaching Hospitals NHS Trust, Hull York Medical School and Hull Clinical

Commissioning Group (CCG), started working in collaboration with a team at AstraZeneca. Together they worked with asthma clinicians and patients using experience-based co-design methodology to develop a programme to promote good quality asthma care through implementation of local asthma guidelines. At the same time, the team have been undertaking a rigorous evaluation and generating real-world evidence to ensure that lessons are learned, and good practice is shared.

What they came up with is an award-winning programme called SENTINEL, to support and empower clinicians and patients to improve asthma care. This programme has the following five components: healthcare professional education, implementation of 'gold standard' prescribing practices, targeted reviews for asthma patients who are over-using SABA, patient education and support, and real-time data monitoring and reporting of asthma care metrics.

“ I genuinely think that the AHSN’s involvement has been great for SENTINEL and will continue to be. The reach and impact that the webinars had, the HSJ awards and the potential to have SENTINEL adopted as a Rapid Uptake Product wouldn’t be possible without their involvement. I think that supporting adoption within regions has been really valuable because one of the key drivers to sustained change is persistent and consistent messaging, and reaching as many people across the care pathway as possible. I think the partnership approach really has added value.”

**Dr Michael Crooks,
Respiratory Consultant and Senior
Lecturer,
Hull University Teaching Hospitals NHS
Trust and Hull York Medical School**



Making asthma care 'greener'

Yorkshire & Humber AHSN is working with Dr Crooks and his team to support further adoption of this programme across other parts of the region, to help reduce the reliance on blue inhalers.

We have played an instrumental part in SENTINEL becoming part of the Accelerated Access Collaborative (AAC) Rapid Uptake Products (RUP) programme and it is currently running across six primary care networks (PCN) in Hull and East Riding – a region with 40,000 asthma patients and some of the highest rates of blue inhaler use in the country.

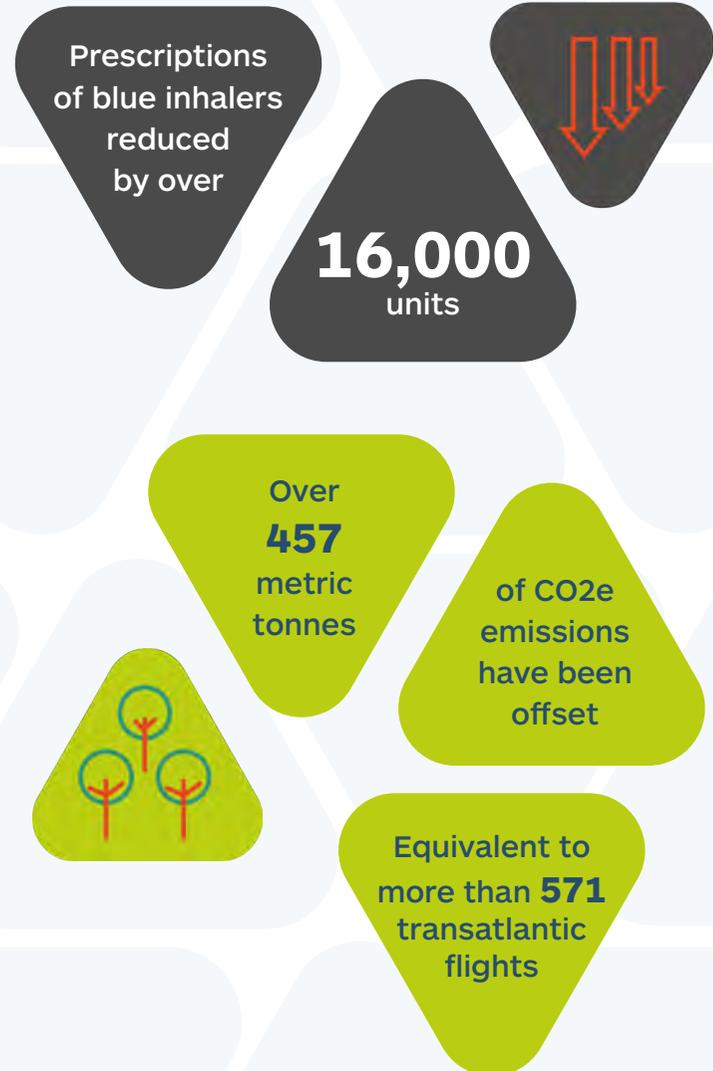
Not only is the SENTINEL project about improving care for asthma patients, it is also committed to reducing the associated carbon footprint that comes with prescribing blue inhalers. Changes in prescribing has reduced the number of blue inhalers used by nearly 16,308 units, equating to an offset of 457 metric tonnes in CO2 emissions which is equivalent to 571 transatlantic flights from Leeds to New York. In

March, the programme was named the 'Environmental Sustainability Project of the Year' at the 2022 HSJ Partnership Awards.

In 2021-22 we organised two free virtual events open to all NHS professionals with an interest in asthma care. The events were led by clinical experts in respiratory medicine and provided an opportunity not only to learn more about improving patient outcomes in asthma care, but also to network and create future collaborations across primary and secondary care. More than 400 people registered for the events and the feedback was excellent. These events gave us the opportunity to identify areas that can benefit from further support, and we shared examples of good practice to help improve care outcomes for asthmatic patients.



Environmental impacts of the SENTINEL project





Reducing inequalities

As part of our commitment to improving access to asthma care for vulnerable and yet-to-reach communities across our region, we helped to secure £140,000 of funding from the AAC's Pathway Transformation Funding (PTF) to support a project that seeks to better communicate with groups for whom English is not their first language.

Dr Llinos Jones is a Respiratory Consultant at Mid Yorkshire Hospitals NHS Foundation Trust, and a key member of the Yorkshire Severe Asthma Network. She runs a Difficult Asthma clinic in an area where up to 20% of patients are from the South Asian community.

As part of her clinical work, Dr Jones has been able to produce a heatmap to further explore the interdependencies between ethnicity, literacy and respiratory health. By overlaying areas of deprivation in West Yorkshire with high prescribing data by GPs, then enhancing the map and adding ethnic population percentages where English is not the main

language, it was clear to see the resulting health inequalities, as well as the areas where there was a higher percentage of problematic or uncontrolled asthma.

One of the main interventions required to break this continual spiral of deprivation and health inequality is the requirement for the patient to understand the literature and information being given to them. There are still huge disparities regarding levels of awareness and understanding of asthma within certain populations, especially for minority communities.



Alongside the Yorkshire & Humber AHSN who helped me tender the bid, we have set about addressing some of the communication inequalities that contribute to poorer outcomes for those from minority ethnic backgrounds and those with learning difficulties. It's a fantastic development to have secured funding which will go some way in helping us tackle the communication barriers that cause these poor outcomes."

**Dr Llinos Jones,
Respiratory Consultant,
Mid Yorkshire Hospitals NHS Foundation Trust**



In partnership with the University of Huddersfield, Dr Jones has started working with asthma champions in underrepresented communities, along with local social prescribers. These local discussions will help Dr Jones and her team to evaluate the current literature that is available for patients for whom English is not their first language. This learning will help inform the development of new graphic medicine sheets, translated materials which will be culturally relevant and understandable to all those who need to interpret the information.

Part of the project also looks at the education and training of practitioners within primary care to help tackle health inequalities by providing practices with access to resources in a range of different languages that they can share with their patients.

The 'Breathe Better Yorkshire Asthma Summit', organised by the Yorkshire & Humber AHSN, brought together more than 150 professionals across our three ICSs, including secondary and primary care, pharmacists and respiratory

networks. It offered a great opportunity to share learnings and best practice, as well as spread and adopt these new materials across the region.

FeNO testing across Humber and North Yorkshire

To help confirm a diagnosis of asthma, and therefore consider effective treatments, a FeNO test can be performed.

FeNO stands for 'fractional exhaled nitric oxide', and a FeNO test measures the levels of nitric oxide when the patients breathe out. Nitric oxide is produced in a patient's lungs when their airways are inflamed, usually because they are allergic to something that they have inhaled. Exhaling a high level of nitric oxide can be a sign that patients have inflamed airways. Alongside other tests, a patient's clinical history, and a trial of treatment, a FeNO test can help confirm an asthma diagnosis which is quick and non-invasive and asks patients to blow into a handheld device that will track their results.

Distribution of FeNO machines and associated benefits

130
machines purchased



41,050
mouth pieces utilised

11,494
additional patients

now have their asthma under control





We were successful in working with the Humber and North Yorkshire ICS to secure £213,376 of funding from the AAC's PTF to provide FeNO testing to GP practices across the region.

The initial target was to distribute 28 FeNO machines and 16,390 mouthpieces, but to date 130 devices have been purchased, with 41,050 mouthpieces utilised. This means that 11,494 additional patients have been diagnosed with asthma that is now under control, improving their quality of life and wellbeing.

PTF monies have also allowed the development of a web resource to store educational assets relating to FeNO delivery, including the national modules produced by the AAC, alongside additional local resources developed within the ICS.





Creating a safer health and care system

The Yorkshire and Humber Patient Safety Collaborative (PSC) is one of 15 in England delivering the National Patient Safety Improvement Programmes (NatPatSIP) as part of NHS England and NHS Improvement's Patient Safety Strategy. Our PSC is delivered by the Improvement Academy which is hosted by the Bradford Institute for Health Research. Melanie Johnson, PSC Programme Manager, explains how we're continually working to support the NHS to become comparable with the safest health care services in the world by 2025.

Experience has taught us that by offering practical help, and facilitating the sharing of innovation and good practice to our partners, we can improve patient safety in the region.

An underlying principle of our work is to build on our successful, evidence-based patient safety initiatives with frontline teams, involving everyone from cleaners to consultants in community, social care, and hospital settings.



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





In Yorkshire and the Humber, we use the tools and interventions based on our learning and have built firm foundations and a robust evidence base to demonstrate what works in practice.

This year the NatPatSIP's work has been focussed across five safety improvement programmes (SIP); maternity & neonatal, deterioration, medicines, adopt & spread and mental health.

Maternity and Neonatal

The Maternity and Neonatal Safety Improvement Programme (MatNeoSIP) aims to reduce the national rate of preterm births from 8% to 6% and reduce the rate of stillbirths, neonatal death and brain injuries occurring during or soon after birth by 50% by 2025.

The Yorkshire and Humber PSC has strengthened its collaborative working approach with the Maternity Clinical Network, the Neonatal Operational Delivery Network, the NHS England regional team, local maternity systems and Maternity Voice Partnerships. We also have an

established MatNeoSIP Improvement Leaders Group representing all the local maternity systems.

As a result, we have developed and progressed our Patient Safety Network, so we are able to work collectively to progress towards our aims but also to respond to specific requests for help; arranging webinars on topics of specific interest such as the British Association of Perinatal Medicines' 'seven elements for safer extreme preterm birth' (BAPM 7).

This year, we have hosted four Patient Safety Network meetings, covering the following subjects: sharing learning, culture, kindness collaborative, deterioration, health inequalities and improving smoke-free pregnancies. In addition, we have conducted three webinars on the BAPM 7, supporting women's choice. In total, over 400 colleagues from across the region attended. These meetings have enabled us to share learning and best practice as well as provide local teams with valuable networking opportunities.

Managing Deterioration

The aim of the Managing Deterioration Safety Improvement Programme (ManDetSIP) is to improve the prevention, identification, escalation, and response to physical deterioration, thereby reducing potential harm for patients. We are working across a range of acute and community settings in health and social care to achieve our aim.

Over the past 12 months, we have worked with several partner organisations (including Primary Care Networks (PCN), Clinical Commissioning Groups (CCG) and local authorities) and social care providers to support the uptake of a range of tools aiming to identify and escalate deteriorating residents.

Patient Safety Network engagement

Over
400
NHS
colleagues



engaged
in Maternity
and Neonatal
Safety events



To support this work, we have devised a suite of generic training materials based on RESTORE 2 Mini (a softer signs tool to help colleagues identify early deterioration) and SBARD (a structured communication tool). We have also created some adapted versions for specialist care settings such as dementia care; working with expert partners like Wakefield Hospice's specialist Admiral nurse, and learning disability; working with a specialist provider and a learning disability nurse.

A new training module has also been developed to compliment this training package which focusses on empowering care home staff to discuss Advance Care Planning (ACP) and End of Life (EoL) care with residents.

Through this work and other programmes of support provided by our partners, we estimate to have helped over 70% of care homes to start the process of adopting a deterioration recognition and response tool and we have developed two new networks that

are now working to spread and embed these solutions into other social care settings.

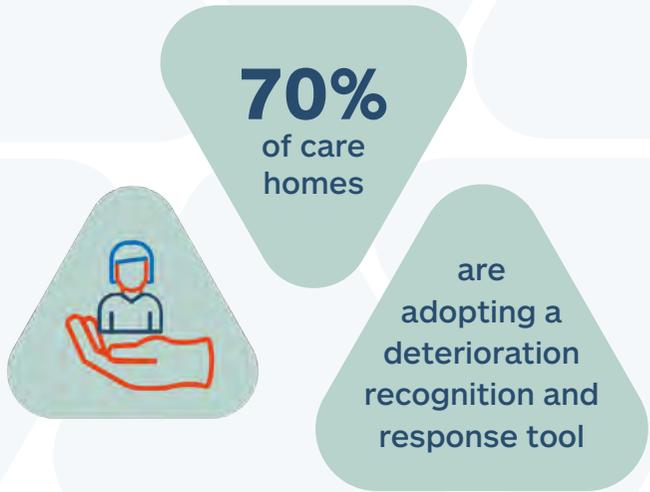
We are incredibly proud of our established networks in this area, which is our way of continuing to spread and sustain the work we deliver and drive improvements in social care across other partner organisations. Our Care Homes Patient Safety Network has a membership of over 200 colleagues and our PCN support network (set up in response to feedback) has a growing membership of over 100.

Medicines Safety

The target to reach a 50% reduction in medicine administration errors in care homes across the country by March 2024 is being delivered through the Medicines Safety Improvement Programme (MedSIP).

The past 12 months have been about finding out what works in practice to reduce medicine administration errors in care homes, with five main areas of focus:

Supporting better management of deterioration



- Safety culture:** Ten staff surveys and feedback discussions have led to some changes in practice to improve safety and break down barriers.
- Interruptions:** We designed and tested a simple audit tool to better understand why staff are interrupted when doing medicines rounds (increasing the chances of mistakes happening) with six homes.
- Understanding errors:** We have adapted the Yorkshire Contributory Factors Framework and tested it in two care homes, helping teams to understand why errors occur and how the cause can be addressed.



- 4. **Three-way communication:** We hosted an exploratory focus group to better understand enablers and barriers to communication between GP practices, community pharmacy and care homes. This led to a change in practice in one care home.
- 5. **Safety huddles:** We designed and tested a [safety huddle](#) tool using the Yorkshire Safety Huddles approach focusing on medicine administration errors across three homes. One home we have worked with has seen a sustained reduction in their error rates.

Adopt and Spread

The Adoption and Spread Safety Improvement Programme (A&S SIP) is designed to identify and support the adoption and spread of effective and safe evidence-based interventions and practice across England.

Chronic Obstructive Pulmonary Disease (COPD) and asthma have been focus areas for three years. The work supports adoption of an inpatient ‘Care Bundle’ to help

ensure patients get the optimum care whilst they are in hospital. Respiratory teams across Yorkshire and the Humber have made great strides to improve all elements of care during the pandemic, and we have continued to network with the trust lead nurses, providing virtual opportunities to discuss and share challenges and support. The data shows that in our region, we exceed the national average for three of the bundle elements: referrals for smoking cessation, pulmonary rehab, and provision of the self-management plan.

Together with Mid Yorkshire Hospitals NHS Trust, we are hosting the ‘Putting the Safe T in Tracheostomy’ event as part of the West Yorkshire & Humber Tracheostomy Collaborative. This is a combination of a face-to-face and virtual event and is aimed at trusts, community staff and hospices. At the time of writing, we had 140 applications for places at the in-person event and 210 applications for the virtual session. Through this work there has been a Multi-Disciplinary Team collaboration with an appetite to continue after the



Our Adoption and Spread data shows that in our region, we exceed the national average for: smoking cessation referrals, pulmonary rehab, and provision of the self-management plan.”

event, and we hope to engage with colleagues across the rest of the region to progress this area of interest.

Mental Health

The aim of the Mental Health Safety Improvement Programme (MH SIP) is to improve the safety and outcomes of mental health care by reducing unwarranted variation and providing a high-quality healthcare experience across the system by March 2024.

We were very pleased to receive new commissions this year to support our mental health and learning disability colleagues with a priority area of safety work. We have been focussing on ‘reducing restrictive practice’ within in-patient services, as this is an area where we know we can make improvements in patient safety and experience.



Restrictive practice involves using measures such as: restraint (to prevent, restrict or subdue movement of another person), seclusion (confinement in a room or physical space) and rapid tranquilisation (use of sedative medication by injection).

Our project builds on an initial pilot led by the Royal College of Psychiatrists' National Collaborating Centre for Mental Health where a small number of wards worked together with patients to co-design and implement ideas to reduce the use of restrictive practice.

So far, we have started work with 11 ward teams across six trusts and have completed six safety culture surveys; using these findings to support conversations about which ideas to test first. The ward teams have been networking through an active learning community and we look forward to seeing the impacts of this work as we move into the initial testing phase.

This learning will be shared throughout the next year and we will look to spread these interventions across the whole region.



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Turbo-charging digital health innovations

Propel@YH is our digital health accelerator programme and was established to help fast-track the uptake of digital health technologies in our region. It provides innovators with a structured course of support and advice aimed at increasing company growth and market presence. Programme Lead, Helen Hoyland, tells the story of our 2021-22 Propel@YH programme.

Propel@YH is open to all innovators that can demonstrate innovative digital solutions for patients and have either an existing presence in our region or are willing to establish one. Our objective is to recruit small and medium-sized enterprises (SMEs) with innovations that have the potential to improve health outcomes for our regional population. We are proud to have successfully completed our third year.

We launched the application process for our third Propel@YH cohort last summer and, as the country was still recovering from the third wave of COVID-19, we put the call out for solutions that would help our health and care systems recover in the



**Helen Hoyland,
Programme Lead**





aftermath of a global pandemic, with an additional emphasis on addressing health inequalities.

In response, we saw a range of health innovations designed to ease pressures on NHS resources.

This year, we were delighted to welcome a new partner on board - the global pharmaceutical company, Pfizer - who joined alongside our existing partners: Nexus at the University of Leeds, Hill Dickinson, Barclays Eagle Labs and Leeds City Council.

Our partners were selected based on the value they could bring to the programme to help the innovators meet the specific demands of the NHS. It was also important that they could provide support on all aspects of building a successful and sustainable business, and were either local to the region or were national companies that have a strong footprint here.

Twenty-two companies applied for this year's accelerator, with 10 companies chosen following a rigorous application process and selection day.

The 10 companies chosen to become our third cohort were:

- [Chatterbug](#) – a social enterprise supporting children and young people with speech and language difficulties.
- [Genome](#) – a digital health company developing advanced quality assurance and improvement software for health and social care organisations.
- [Heyr](#) – a mental health app.
- [Hummingbird Medical](#) – a 'BookYourGP' tool that helps to organise complex medical care for GPs.
- [Rewire Stroke](#) – using data and clinical best practice to deliver personalised stroke therapy.
- [PhysioBuddie](#) – an online therapy service that provides its users with remote step-by-step progressive rehabilitation.
- [Promatica](#) – a digital management system for social prescribing by Social RX.
- [Syrona Health](#) – the 'Sora' app is a digital health platform supporting chronic gynaecological conditions like endometriosis, PCOS and menopause.
- [Your Meds](#) – a smart medication system that helps people take the right medication at the right time, with support from family and friends.
- [Vitacam](#) – this product transforms routine clinical observations from manual contact-based methods to contactless measurements.

Financial support, benefit in kind specialist expertise and mentorship has been provided for this programme to Yorkshire & Humber Academic Health Science Network as a donation by Pfizer Ltd.



We assessed the impact of the accelerator, which included:

- 55 hours of high-quality support delivered virtually – an increase of 14% compared to last year
- £57k invested in the Leeds ecosystem
- £18k of Innovate UK grant funding generated for an SME
- £20k grant funding generated for the programme from Leeds City Council
- 20 collaborations facilitated with national and local NHS stakeholders
- 5 SMEs said the programme had contributed to their growth and spread in Yorkshire and Humber
- 4 SMEs plan to invest further in Yorkshire and Humber and 3 in the Leeds region
- Generated two NHS trials with an SME

Impact of Propel@YH 2021-22



£57k
invested in the
Leeds ecosystem



9
companies
improved their
understanding of
the NHS

£38k
grant funding
generated



55
hours of
support
delivered
virtually



Find out more about this year's Propel@YH programme in this video of our launch event



4
companies plan
to invest in
the region
further



Propel@YH Net Zero

Alongside our Propel@YH programme, we also launched Propel@YH Net Zero last year. This pilot project was commissioned by West Yorkshire Health and Care Partnership to support the NHS in reaching its net zero target by 2040. This health accelerator was aimed at SMEs with green innovations.

Patients Know Best and Dignio were amongst the first ever cohort selected to be on the Net Zero programme and the Yorkshire & Humber AHSN worked closely with them over a three-month period to offer advice and support with their innovations.

Both companies' technology empowers the patient to oversee their own healthcare, alongside medical professionals - they both use digital systems and therefore keep patients out of hospital.

[Patients Know Best](#) (PKB) is a digital personal health record platform that allows both patients and healthcare professionals to access healthcare records anytime, anywhere.

It empowers the patient to oversee their own healthcare, understand their conditions and manage their health and wellbeing, alongside medical professionals. Using a digital system supports keeping patients out of hospital, including enabling them to access tailored resources created by their healthcare teams, to support self-management of their condition.

[Dignio](#) is a digital integrated care platform that connects both patients and healthcare professionals, providing virtual remote care. It is patient-focused and empowers the user to self-manage their condition with support from healthcare professionals.



Patients Know Best were fortunate enough to be part of the Propel@YH Net Zero programme, alongside a number of innovative and exciting companies. The Yorkshire & Humber AHSN continues to support our environmental mission, providing a huge wealth of knowledge to support our journey and being that critical friend, highlighting key areas for us to explore further."

**Tom Gausden,
Head of Sales & Life Sciences and
Sustainability Lead,
Patients Know Best**



Propel@YH Boot Camp

This year we also delivered our inaugural Propel@YH Boot Camp for global innovators. Working closely with the Department for International Trade (DIT) and the Texas Medical Centre, the week-long accelerator programme was aimed at companies based in the US who wanted to bring their products to the UK healthcare market.

The international cohort had access to five days of intensive support, knowledge and engagement with UK healthcare experts. It also gave them the opportunity to engage directly with local NHS stakeholders, as well as the wider healthtech ecosystem in the Leeds City Region.

The US Boot Camp cohort included:

- [Televeda](#) - an online hub for older adults to combat social isolation.
- [Musical Health Technologies](#) - 'SingFit' is an award-winning music app designed to improve wellbeing.
- [Behavidence](#) - an app that helps users achieve great mental wellbeing with daily feedback based on a user's digital behaviour.
- [Luminare](#) - the Sagitta workflow management programme helps hospitals to identify sepsis quicker and ensures timely treatment.
- [Lab Ready](#) - the world's first and only automated system that collects and stores bacterial samples for a faster and a more confident diagnosis.

Each SME benefitted from a programme of masterclasses, workshops and networking events on topics such as understanding how the NHS works, NHS governance, finance and procurement frameworks, clinical safety and supplier regulations, developing evidence-based proposals, and reimbursement models.

We are aiming to extend our bootcamp to other countries later in the year.



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



Over the five days:

- 48 hours of high-quality support was provided
- Over £15,000 in local investment was brought into the Leeds region by utilising the Nexus, Avenue HQ and Queens Hotel facilities
- Instigated 10 introductions and discussions with the NHS in Yorkshire and Humber
- 3 SMEs brokered discussions with local strategic stakeholders
- 2 SMEs took up a virtual community offering from Nexus, University of Leeds.



Propel@YH Boot Camp



over
£15k
investment
brought
into Leeds region



10
introductions
instigated
with the
NHS



2
companies
took up
Nexus' virtual
community
offering



A hub of innovation in South Yorkshire

Our pioneering Innovation Hub has been developed in partnership with South Yorkshire & Bassetlaw (SYB) Integrated Care System (ICS). The Hub is comprised of a team of Yorkshire & Humber AHSN staff embedded within the ICS since July 2019. In this article, Innovation Hub Director, Aejaz Zahid, highlights what his team has achieved over the last 12 months.

The core function of the Hub is to support the ICS in identifying opportunities for innovation and to foster a culture of innovation across partner organisations.

Over the last 12 months, we have continued to support the post-pandemic recovery, focusing on innovations that provide remote care or enable patients to self-care at home.

Improving urgent and emergency care in South Yorkshire

Part of our role at the Hub is to introduce a programme of exemplar innovation



**Aejaz Zahid,
Innovation Hub
Director**





projects designed to test out new ideas in practice. One of these projects is supporting urgent and emergency care (UEC) services in SYB. Within UEC, it was agreed that the management of respiratory diseases was an area experiencing increased pressures.

To date, this project has trained 30 frontline staff in cognitive behavioural therapy (CBT) techniques to reduce anxiety and anxiety-triggered exacerbations in respiratory patients, resulting in reduced contact with urgent and emergency care. Staff also completed learning on an online platform which complimented their training.

We are now moving into the implementation and evaluation phase for this work and the Hub is working with York Health Economics Consortium (YHEC) to evaluate the project; with a final report expected in 2023.

Continuing our support with the urgent and emergency care workstream, we have managed and delivered an Innovation Award

scheme in the SYB region. The aim is to pilot new and existing ideas to improve the urgent and emergency care landscape around the following priority areas:

- Integrated Urgent Care
- In-Hospital Admission avoidance
- Discharge

The scheme launched in September 2021 and is designed to quickly test ideas before being accelerated for wider adoption throughout the system.

A total of £250,000 was distributed between four successful applicants across SYB. These projects will run for 12 months, with project teams working closely with the NIHR Applied Research Collaboration UEC Team based at the University of Sheffield, to assess the benefits to patients.

Funding success

Our work with the Active+Me cardiac rehabilitation platform and the teledermatology app, Skin Vision, has led to the SYB ICS winning two

NHSX Digital Partnership Awards, one of the highest success rates for an ICS in the country.

SYB was one of 11 integrated care systems in England to be awarded a digital partnership fund, receiving a total of over £360,000 to encourage the uptake of transformational digital solutions like Active+Me and Skin Vision.

Active+Me

The Active+Me remote monitoring software supports patient self-care, including patient education and has a range of devices including blood pressure and pulse

SYB Innovation Award to improve urgent and emergency care

£250k
distributed



between
four
successful
applicants
across SYB



oximeter devices, smart scales and wearable activity trackers, along with seven-day-per-week telephone support.

We are introducing and supporting the implementation and evaluation of the tablet-based platform to enable patients who have been discharged following a cardiac event to continue rehabilitation and have their progress monitored from the comfort of their home. It is envisaged that this alternative approach to rehabilitation will increase uptake, reduce workforce pressures, improve equity of care and reduce the risk of further cardiac events for these patients.

Skin Vision

Skin Vision drives early detection of skin cancer by empowering individuals to self-check suspicious skin spots with their smartphone. Using a photo taken and uploaded by the patient, the app uses AI to risk stratify the skin condition, enabling patients at higher risk to be prioritised within the pathway.

Working with Barnsley Hospital, we identified that dermatology was an

area for improvement and could benefit from the implementation of technology like Skin Vision to assist with a limited workforce and increasing demand.

Working with the Cancer Alliance

Cancer Alliances work in partnership with NHS organisations, local councils, charities, and voluntary groups to transform and deliver services and care across England. For 2021/22 there remain three overarching priorities for the SYB Cancer Alliance:

- tackling inequalities and early diagnosis;
- recovery and transformation to sustainable pathways and;
- personalised care.

These priorities are aligned to, and contribute towards achieving the ambitions for cancer set out in the [NHS Long Term Plan](#).

We have been working in partnership with the Cancer Alliance to set up evaluations for four programmes of work; C the Signs, Patient Pathway

Funding secured from NHSX

£360k
awarded

from
digital
partnership
fund



SYB Cancer Alliance awards scheme

£10-30k
grants awarded



to promote
innovation and
improvement in
cancer services



Navigators, Behavioural Science and Faecal Immunochemical Testing.

The Hub has hosted and facilitated workshops with the Alliance to define metrics linked to three overarching impacts that they hope to achieve; improved patient outcomes, efficiency of service and reduced health inequalities. It also helped to draft logic models and define key metrics for two of the programmes, supporting engagement from the most appropriate evaluation partners and building a knowledge base and capacity within the ICS team.

Recently, the Hub has supported the Cancer Alliance to launch an awards scheme to promote innovation and improvement in cancer services. Grants of between £10-30k have been awarded to successful applicants within the region's health and care services.

Nurturing a culture of innovation

Through our Innovation Labs we have been bringing together health and care professionals to explore

the role of innovation in addressing the challenges experienced by staff working in the system. We are hosting a series of Innovation Lab forums in South Yorkshire and Bassetlaw taking place quarterly and providing an opportunity to learn how to articulate unmet needs across the system and co-create solutions to these challenges.

Following the first event, 100% of post-event survey respondents said that the Innovation Labs were either supportive or very supportive of fostering a culture of innovation in health and care organisations in SYB.

In 2021, we were delighted to launch our podcast, Innovation Station. The monthly productions focus on discussions around healthcare innovation at an ICS level and offers a new and accessible perspective on initiatives in the region that are positively impacting patient outcomes, as well as system effectiveness.

You can listen to all podcast episodes so far on our [web portal](#).



Last year, the Hub also hosted the region's first *Social Care Robotics and AI-Enabled Care Technologies Forum*, bringing together key leadership figures from local authorities, primary care, community care, CCGs and academia. The event sought to explore the potential of emerging social care innovation which can enhance home based care and help reduce demand on health and social care services.

Successful innovation case studies from local authorities across the country were presented, along with several early-stage innovations that are under development at regional universities and are ready for real-world testing.

Following this forum, a regional consortium has been established which will foster collaborative efforts around bids for funding; developing pilot projects and fostering evidence gathering to support the adoption of innovation at the intersection of health and social care.



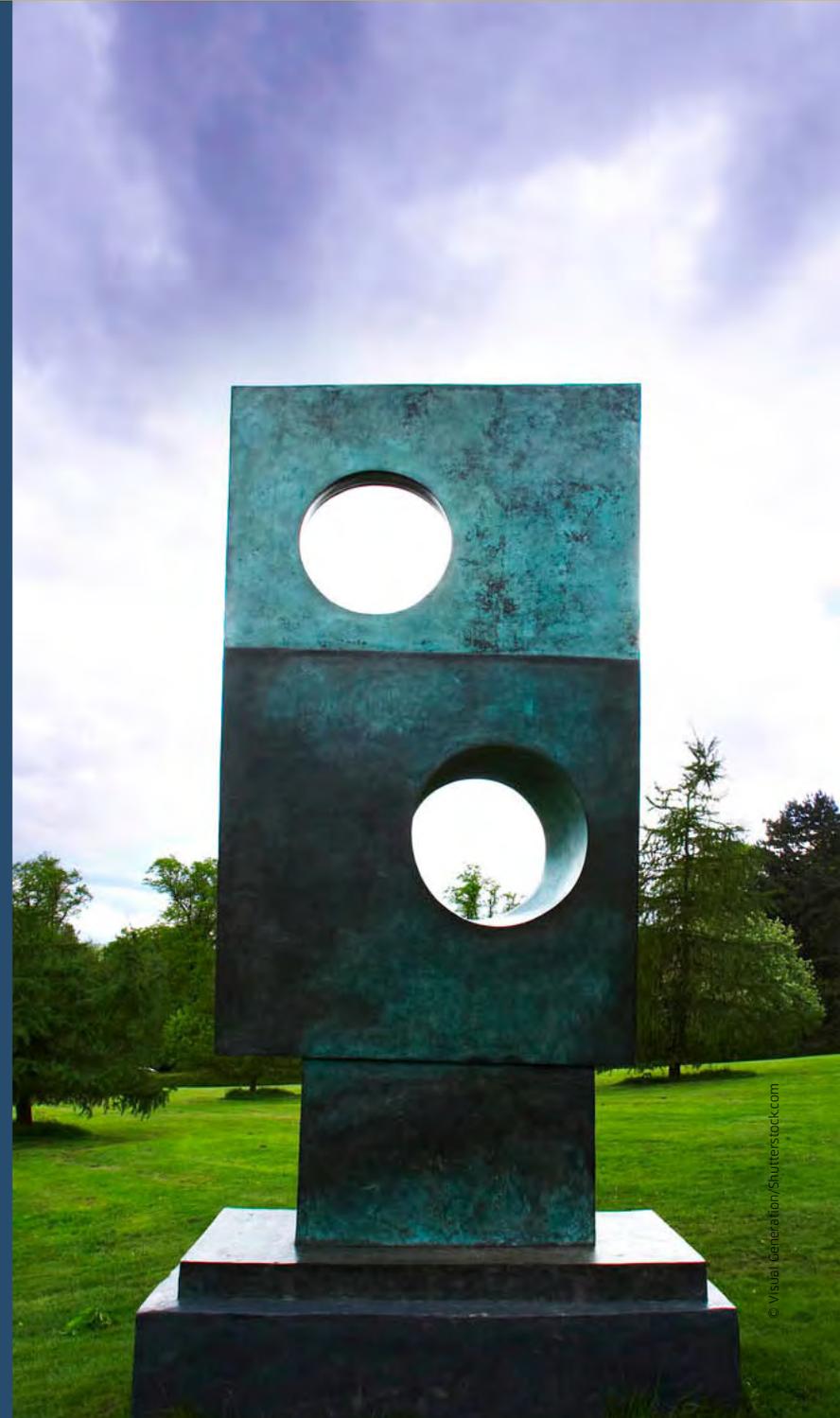
Supporting our innovators at home and overseas

A central element of our role is the adoption and spread of commercial innovations that not only improve health outcomes and drive healthcare efficiencies, but also stimulate inclusive economic growth in the life sciences sector by supporting the creation of jobs and further investment in Yorkshire and the Humber. In this article, Director of Enterprise and Innovation, Dr Neville Young, reflects on our work in the last 12 months to drive investment into our region by demonstrating impact through real-world evaluations (RWE) and giving local patients the opportunity to be the first to benefit from new technologies from regional, national and international innovators.

Being able to support business and market growth for our innovators and our region's economy continues to be a tremendous privilege for our AHSN, and we are incredibly proud of what we have delivered this year.



**Dr Neville Young,
Director of Enterprise
& Innovation**





In 2021-22, we have helped to leverage a total of over £21m of investment into our region. Adding to that, we have supported 42 grant applications (tripling our initial target), 14 of which were successful, including £900,000 Small Business Research Initiative (SBRI) funding for PinPoint Data Science’s cancer detection test, and a further £100,000 each from SBRI for four companies with carbon-friendly products.

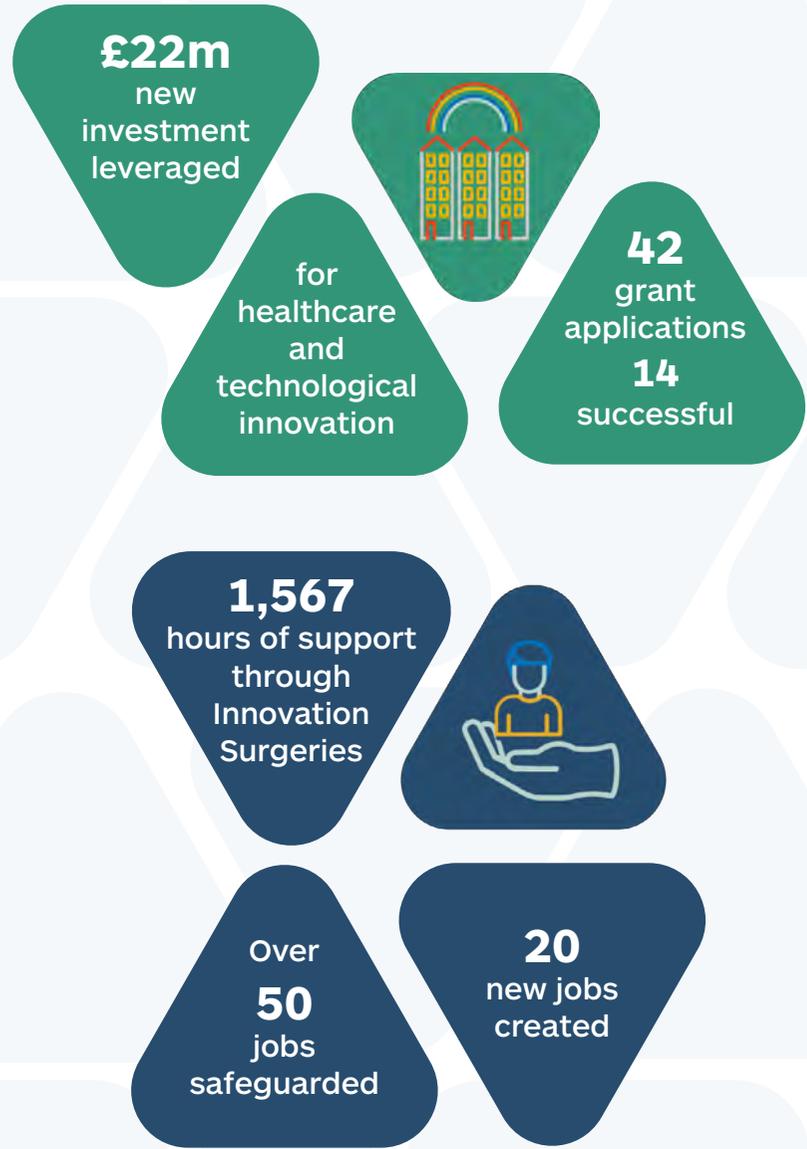
Our 49 bespoke innovation surgeries, giving SMEs the chance to speak to us directly for advice and guidance, has also seen us provide over 1,567 hours of support to 283 companies, safeguard over 50 jobs and contribute to the creation of 20 jobs in our region.

Our 16 themed Health Innovation Exchange events (exceeding our target of six) were delivered virtually, with over 35 hours of content, presenting a total of 136 innovations. Around 1,500 people registered to attend these events, comprising of clinical, strategic, operational, and digital NHS stakeholders, which covered themes such as robotic process automation, rehabilitation,

immersive technology and supporting patients with long-COVID.

One of our biggest events of the year was [Bridging the Gap](#), which we hosted on behalf of the AHSN Network and was attended by 130 delegates from the NHS and industry. This was the first national AHSN face-to-face event post-pandemic and we were delighted with both the agenda and the turnout on the day. Once again, we brought together innovators and healthcare leaders (including Matt Whitty, CEO of the Accelerated Access Collaborative (AAC) and Director of Innovation, Research and Life Sciences at NHS England) to discuss the future challenges and priorities for our health and social care systems, and how new products and services can become ‘market-ready’ to provide solutions.

Impact of our support for innovators





Working internationally

The Yorkshire & Humber AHSN leads on international activity on behalf of the AHSN Network and we have a successful track record of helping overseas innovators import their products into the NHS, as well as supporting UK companies to export to foreign healthcare markets.

This year we have delivered a series of highly successful events where we have provided support to 150 SMEs from Norway, the Middle East, USA, Taiwan, Ireland, Sweden, Finland, Iceland, Lithuania, and Israel. We are keen to bring the best health innovations from around the world into the UK to meet the needs of our population. And where possible, we want the Yorkshire and Humber region to be the first to use these innovations. This year, we have taken a step further. Through our partnership with the Department for International Trade (DIT) we delivered our first international bootcamp. Building on the success of our national Propel@YH accelerator programme, we provided a one-week bootcamp to five US-

based SMEs to help them land their innovative products in our home market. You can read more about our Propel@YH Boot Camp on [page 34](#).

Our long-standing partnership with the ABHI also enables us to collaborate to drive the export agenda of our UK based healthtech SMEs. We have helped recruit and support UK innovators onto the ABHI US accelerator programme as well as on to other trade missions including international trade shows like Arab Health, where we represented the AHSN Network at the 2022 event in January.

Overall last year we supported over 40 UK health tech innovators to reach out to new international markets, helping them to forge new international partnerships, seek investment and increase sales and business growth.

We also work with the Foreign and Commonwealth Office and the DIT on initiatives such as the Better Health Programme – a project that seeks to tackle non-communicable diseases like heart disease and strengthen

local health care systems to improve quality of care.

This gives us the opportunity to support other countries to develop their own healthcare systems by sharing knowledge and expertise from the UK to help drive innovation and improve patient outcomes globally. For example, last year we worked with the Ministry of Public Health in Thailand to identify UK-based digital innovations in mental health that could be implemented to address the needs of their population.



See what happened at the Bridging the Gap event that we hosted on behalf of the AHSN Network in March 2022



Our international successes include:

- Reaching more than 100 delegates from Healthtech companies who attended our two events in partnership with ABHI, Eastern AHSN and UCLPartners. They focused on getting ‘export ready’ and understanding the Middle East healthcare market.
- Engaging 60 attendees for our webinar introducing Taiwan MedTech SMEs to the NHS.
- Establishing a partnership between Leeds Teaching Hospitals Trust and Oslo Hospital and engaging with 10 Norwegian SMEs after attending and presenting at a Norwegian medtech conference.
- Playing a key role in the development of the Leeds Israel Innovation Gateway, alongside Leeds Teaching Hospitals Trust and Leeds Local Enterprise Partnership, which launched in Tel Aviv in May.
- Delivering our first Propel@YH Boot Camp for US companies, which has led to a partnership with Nordic Innovation to run a Nordic version in September 2022.

Connecting our innovators with the NHS

We believe that our international work should reflect our domestic objectives where we recognise the key priorities within the system and look to the whole market for solutions. A clear priority this year has been supporting our NHS partners in addressing the challenge of restoring services and reducing the elective backlog caused by the pandemic.

Given our experience of working with healthcare innovators both in the UK and internationally, we can help to identify the right solutions that can improve patient care and ease the pressure on frontline staff.

And this is where our portfolio of business accelerators plays a crucial role.

Our Propel@YH Net Zero and our Propel@YH Boot Camp initiatives, both spin-offs of our flagship Propel@YH accelerator, supported a variety of SMEs to access the UK healthcare market through a programme of masterclasses, one-to-ones and a range of advice

and guidance. Our priorities within these programmes were focussed on the needs of the health and social care system, and therefore both sustainability and health inequalities were areas we sought to address through these programmes of work.

We were also proud to collaborate with our fellow northern AHSNs (Health Innovation Manchester, the Innovation Agency North West Coast and AHSN North East and North Cumbria) to deliver this year’s [Digital North](#) accelerator, providing support to regional digital health technology firms in the adoption and spread of proven innovations within the healthcare system. Successful solutions are then guided towards national adoption through the Innovation Exchange programme.





This year's programme was themed around "Restore, Reset and Recover", and delivered game-changing digital innovations which met the COVID recovery priorities of our NHS partners.

Two Digital North showcase events were held and attended by 130 people, with senior keynote speakers from NHS England, the AAC, NHSX and Office for Life Sciences, that highlighted the national and regional system pressures, policies, and current priorities. Demonstrations of digital technologies were showcased by each SME as part of an interactive forum that showed how they can be used to address health and care priorities.

Further one-to-one introductions to key NHS stakeholders were assisted by a bespoke commissioning brochure. These activities and events generated significant engagement, which facilitated a positive commercial impact at a local, regional, and national level.

The programme also demonstrated successful collaboration between the four northern AHSNs, strengthening relationships within the commercial teams and sharing knowledge of the innovations and their adoption and spread across the north of England. This cohesion was an exemplar of how the AHSN operates as a network and we are looking forward to working together on the next Digital North programme, which looks set to focus on supporting technologies that can address the future carbon neutral demands mandated on the NHS supply chain.

“ The Digital North accelerator showcase demonstrated how truly invaluable Yorkshire & Humber AHSN have been in supporting the rapid adoption and spread of proven digital innovations. It is clear that these innovations, developed by impressive companies such as C2-Ai and PinPoint, will be key to addressing the major challenges facing the NHS and transforming the way we deliver care.”

Colin Wilson,
Deputy Director,
Office for Life Sciences

“ Working with the Yorkshire & Humber AHSN has been, and continues to be, an excellent experience. Their support has been fundamental to our progress in spreading our innovation through the NHS.”

Giles Tully,
CEO,
PinPoint Data Science



You can view the full 2021 cohort list in the [Digital North brochure](#). Here are some examples of success stories within Yorkshire & Humber.



C2Ai – a patient tracking system that stratifies priorities and validates effective waiting lists.

Funding for a six-month pilot evaluation in Harrogate and District NHS Foundation Trust has been agreed. Previous pilot projects saw a 15% increase in surgical capacity and over 27% reduction in the 52 week waits. Their technology has also been adopted by 16 NHS trusts across England.



Malinko – an e-scheduling system that enables community services to safely manage their capacity and demand.

The e-scheduling system was selected in February 2022 by University Hospitals Birmingham NHS Foundation Trust, to support their district nursing service to better manage workforce capacity and optimise the scheduling and coordination of patient care. The service can improve productivity by up to 30%, and the Yorkshire & Humber AHSN are providing Malinko with ongoing support to set up a carbon reduction pilot study.



PinPoint – a cancer diagnostic test that uses AI to help clinicians ‘red flag’ high-risk patients.

Following a successful SBRI Healthcare bid in February 2022, the service evaluation is continuing to expand across the West Yorkshire ICS, driven by an acceleration plan led by the Cancer Alliance and supported by Yorkshire & Humber AHSN. PinPoint has also received interest from Thames Valley and will be conducting a pilot in 2022 with the Surrey and Sussex Cancer Alliance, and Kent, Surrey and Sussex AHSN.



Providing real-world evidence

While a large proportion of our work is about finding the right solutions for our health and social care stakeholders and their needs, we also work hard to evidence the benefits and impacts of a new service or product through real world evaluations (RWE).

Most real-world evaluations will have a significant health economic component, and we seek to understand the cost impact of an intervention once they go live with a new customer. The innovations we test usually have regulatory and information governance compliance in place and will have undergone substantial clinical testing in a controlled environment. But we are often keen to ensure that, once deployed in uncontrolled settings, they deliver the benefits originally predicted.

In this last reporting year, we have initiated seven RWEs. Four were implemented within the West Yorkshire Health and Care Partnership and three in Humber and North Yorkshire Health and Care Partnership. Future work will encourage stakeholders in South Yorkshire and Bassetlaw ICS to participate in pilot projects, to achieve a balanced spread across all three of our regional systems.





Case study: Klinik

This primary care triage platform 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 artificial intelligence (AI) triage and online consultations, in combination with a dedicated telephone module.

Klinik's technology has been implemented across several Primary Care Networks (PCN) in the Yorkshire and Humber region. Implementation plans for Klinik were accelerated at the start of the coronavirus pandemic, with timescales at Haxby Group PCN in York reducing from 18 months to a few weeks.

The Haxby Group was the first PCN in the UK to adopt the system, with the Yorkshire & Humber AHSN supporting case studies on its implementation. Initial analysis of data from the Haxby group found:

- The Klinik system facilitates a total triage model, avoiding a first come first served approach with a system that is truly needs based.
- Health inequalities are not worsened due to lack of IT, because the assessment outcome is the same for patients who use the system, call, or walk into the surgery.
- Patients now have 24-hour access to their surgery.
- Within months of the system being introduced, 34% of all queries came through online, compared with 3% pre-COVID. It is likely that this figure has continued to rise.

Following successful implementation in other PCNs, our AHSN is now co-funding a health economic analysis of Klinik's technology, utilising data from its use at the Priory Medical Group – another large PCN in York. This evaluation is being undertaken independently by York Health Economic Consortium, with the expectation that data will be available to share in Summer 2022.





Case study: B. Braun

B. Braun's knee sensor monitoring system, BPMpathway, is a digital rehabilitation system for personalised pre- and post-operative support of orthopaedic patients. The system provides an enhanced recovery programme using a wearable sensor, with patients receiving digital advice remotely before and after surgery. The system records data on their progress and clinicians can use the data to personalise the patient's programme.

The Yorkshire & Humber AHSN showcased B. Braun to over 150 NHS and industry stakeholders during a Health Innovation Exchange event in September 2021.

We have now commissioned an RWE study through Leeds Teaching Hospitals NHS Trust for people undergoing a knee replacement. The 12-month study will include around 250 patients and is being undertaken by York Health Economics Consortium.

Work already carried out in Calderdale indicates that the BPMpathway leads to better clinical outcomes for patients and reduces the length of stay in hospital. We hope that by supporting the RWE, B. Braun can generate evidence to show that remote sensor technology is safe, just as effective as current face-to-face care, and is well received by patients. We also know that the new pathway has considerable environmental benefits, and we will be looking to demonstrate this as part of the RWE study.





Case study: PhysioBuddie

PhysioBuddie is an innovative online therapy service that provides its users with remote step-by-step rehabilitation. The service has been adapted for use across several clinical areas, but the focus here is on the service's dedicated support to allied health professionals and patients in their rehabilitation pathway following total knee replacement (TKR) or total hip replacement (THR) surgery.

Having undertaken feasibility testing for PhysioBuddie, one of 10 products selected for our 2021 Propel@YH accelerator, the service is now being implemented at sites in Yorkshire and Surrey.

Having identified the need to evaluate their technology, the team behind PhysioBuddie approached Yorkshire & Humber and Kent, Surrey, Sussex AHSNs to discuss support for a health economic evaluation of the project, exploring the system's effectiveness in reducing rehabilitation costs and waiting lists for patients undergoing TKR or THR surgery.

The evaluation will be undertaken by Unity Insights at Kent, Surrey, Sussex AHSN in partnership with Yorkshire & Humber AHSN.





Supporting the MedTech Funding Mandate

The NHS Long Term Plan committed to accelerate the uptake of selected innovative medical devices and digital products by developing the MedTech Funding Mandate policy. As an AHSN, it is our role to help the adoption and spread of these innovations, and our Programme Lead, **Stephanie Potts**, explains the work we have been doing to help promote these products to our NHS partners.

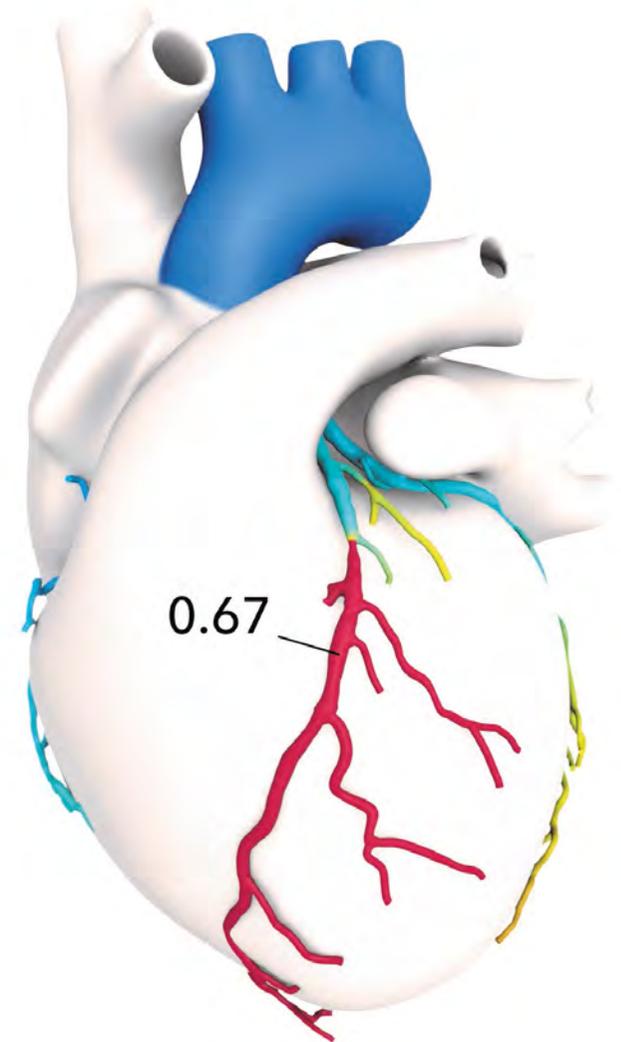
We have established strong working relationships with the companies selected for this year's MedTech Funding Mandate and this has helped to facilitate the spread and uptake of these innovations in NHS organisations across our region.

This year, the four products have been:

1. [Placental growth factor \(PIGF\)-based testing](#) – a blood test to rule out pre-eclampsia in pregnant women.
2. SecurAcath – for securing percutaneous catheters.



**Stephanie Potts,
Programme Lead**





3. HeartFlow – creating a 3D model of a patient’s coronary arteries to assess the extent and location of blockages.

4. [GammaCore](#) – a handheld device that alleviates the symptoms of severe cluster headaches.

Our case study videos produced last year demonstrate our success with the implementation of PIGF and GammaCore. This year, we have been proud to see the results of our work with HeartFlow and SecurAcath.

HeartFlow is a non-invasive procedure that creates a personalised 3D model of the coronary arteries and analyses the impact that blockages have on blood flow.



See how HeartFlow is improving patient care

Impact of HeartFlow



£214
saved per patient

1,295
HeartFlow scans conducted

£277k
savings for the NHS

“ The Yorkshire & Humber AHSN team have been incredibly helpful and supportive in the implementation of HeartFlow. They have also played a major part in helping Trusts secure funding for the programme.”

Gina McDonald Main,
Vice President of Government Affairs,
HeartFlow



It enables clinicians to identify significant coronary artery disease and determine the optimal treatment pathway, significantly cutting health care costs and leading to improved patient experiences and quality of life. Statistics show that more than half of patients who undergo invasive angiogram tests have no significant coronary blockage.

By using HeartFlow analysis, cardiac patients can have just one hospital appointment, potentially avoiding invasive diagnostic procedures that can carry risks of complication and often be lengthy and involve discomfort. It is estimated that this could save the NHS £214 per patient.

Leeds Teaching Hospitals NHS Trust, Hull University Hospitals NHS Trust, and Sheffield Teaching Hospitals NHS Foundation Trust, have been working with the technology and, between them, have conducted over 1,295 HeartFlow analysis scans on patients, equating to £277,130 in savings for the NHS in our region.

Meanwhile, SecurAcath is a device that holds catheters in place without the need for sutures or adhesives. Patients in hospital may experience a range of complications when peripherally inserted central catheters are moved or dislodged.

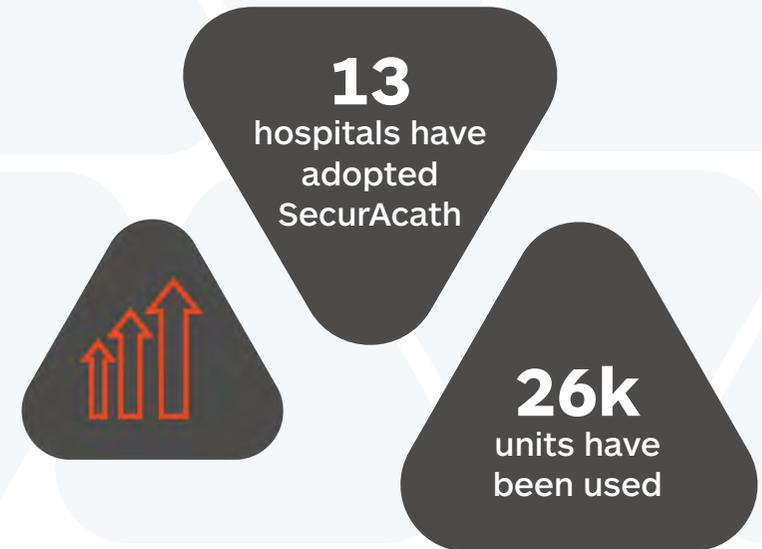
We have supported the adoption of this product in all 13 hospitals across our region and to date, 26,370 units of SecurAcath have been used, reducing the need for catheters to be replaced and saving the NHS a significant amount of time and money, as well as providing a more comfortable experience for patients.

Next steps

We will be continuing to work with these four products as the AHSN supports further implementation over the next year.

Plans are also now underway to roll-out the seven products outlined in the 2022-23 policy, which are categorised into the following two themes:

Spreading SecurAcath across our region



The Yorkshire & Humber AHSN has been very supportive. They helped us network with our local Clinical Commissioning Groups to get the appropriate funding to continue providing the HeartFlow service. I feel I am making a difference in my day-to-day care for patients."

**Dr Imran Sunderji,
Consultant Cardiologist,
Hull University Teaching Hospitals NHS Trust**



Benign prostatic hyperplasia (BPH)

– a common prostate condition for which the selected technologies will provide alternative treatment to transurethral resection of the prostate.

Improving the patient experience during procedures – the chosen products will provide alternatives to otherwise more invasive and costly procedures.

We are very much looking forward to building on the success of last year’s work and will remain as committed as ever to get these NICE-approved products to NHS patients faster.



I have been really impressed by how the PICC line and SecurAcath has transformed my experience as nurses always had problems getting a cannula in. I find it very comfortable to the point that I forget I have it and occasionally catch it. I have never had any problems with it moving position, my skin has been sore at times, caused by my treatment, but the SecurAcath has never made my skin sore. I am really glad I have it.”

Metastatic bowel cancer patient on fortnightly treatment that requires a PICC line





Giving a voice to the public and patients

Patient feedback is vital to better understand how care services can be improved. Authentic patient involvement is paramount to inform the design of services that can make the greatest difference. Our Public and Patient Involvement Lead, Graham Prestwich, explains how we are collaborating with patients and the public to engage them at an early stage to shape effective, patient-centred healthcare services.

Timely and effective healthcare has a big part to play in people's health and wellbeing and, alongside this, a healthy lifestyle makes a huge, positive difference too. What is often overlooked however, is the role an individual can play to determine how effective health and care services can be.

At Yorkshire & Humber AHSN, we recognise how vital it is to involve people in the development, design and review of services for the communities in which we



**Graham Prestwich,
Public & Patient
Involvement Lead**





live and the population of which we are a part. The patient themselves has the most power and is largely in charge when it comes to achieving a good outcome.

Take medicines as an example. The patient is responsible for ordering, storing and the daily administration of medicines, presenting for regular review and reporting unwanted effects or a changing situation. Medicines are the most common intervention used by the NHS to treat and prevent ill health. Currently there is considerable interest nationally in the overprescribing of medicines, particularly in older people, and this was published in a review by the [Chief Pharmaceutical Officer in September 2021](#). Our initiative, 'Me and My Medicines' was recognised in the report for its contribution to enable patient and public perspectives to be heard.

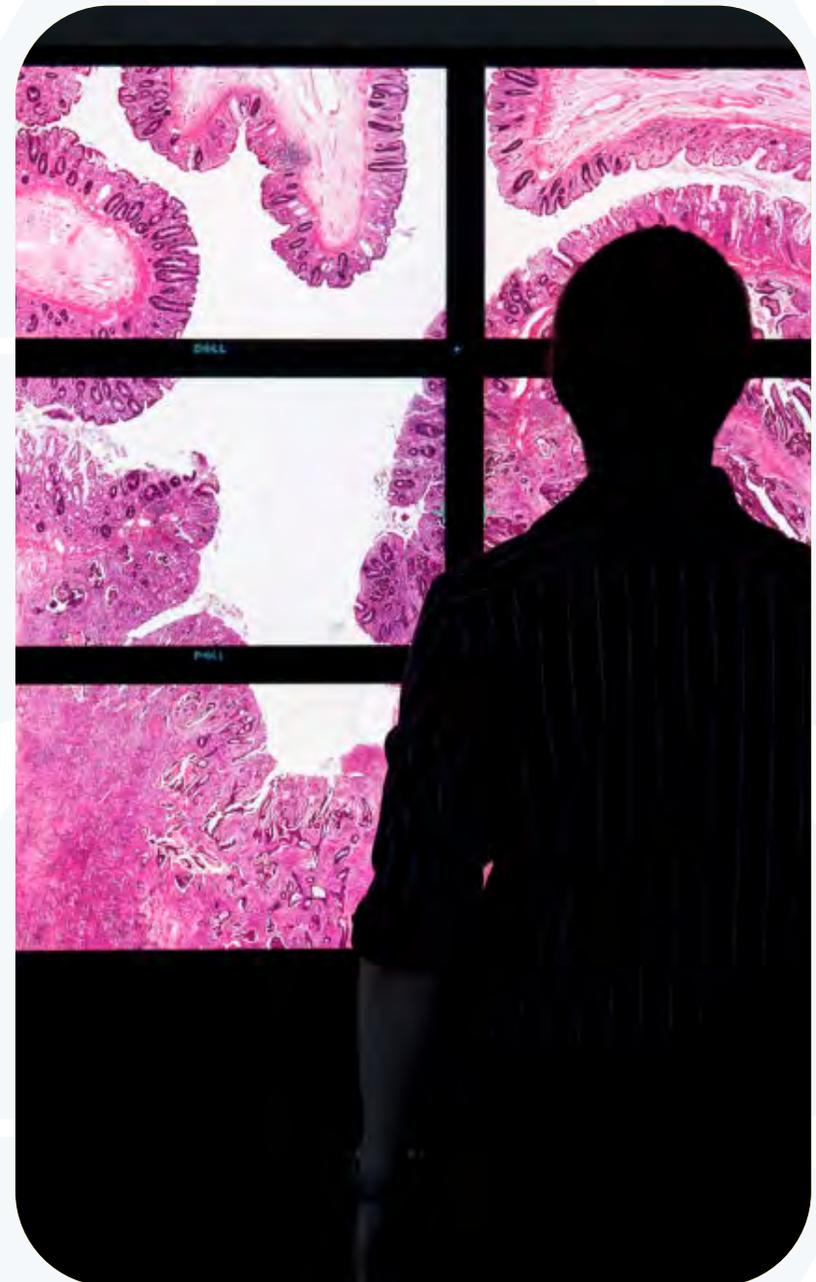
The outcome of this project was a communication charter with six principles for both patients and professionals about effective and authentic communication, supporting shared decision making and greater understanding.

Yorkshire & Humber AHSN, along with local providers and commissioners in Leeds, supported this work. The result is a simple and inexpensive resource that is widely available to anyone interested in providing additional support and encouragement for patients to be more involved in the conversations with their health professional about their medicines. The aim is to reduce the risky and inappropriate use of prescription medicines.

Artificial Intelligence and the importance of the patient and public voice

The National Pathology Imaging Co-operative (NPIC) is a national collaboration with the goals of (a) achieving the introduction of digital pathology and (b) developing effective Artificial Intelligence (AI) based tools to improve the diagnosis process.

Yorkshire & Humber AHSN played a key role in helping to include and involve the public perspective in this work. We contributed to the recent publication by members of the NPIC team in the [Journal of Pathology and](#)





[Clinical Research](#), a paper that looks at the ethical challenges of artificial intelligence-driven digital pathology and to a [public exhibition at a library](#) in Oxford.

CONDOR

The public awareness of self-diagnosis has been driven by the need to test for coronavirus. The introduction of new, rapid tests carried out in the home, generated the need to be able to test the effectiveness of these new, commercial test kits.

The [CONDOR](#) programme looks at the performance of COVID-19 diagnostics in different clinical settings, as well accelerating their 'real-world' use.

We have contributed to this work by ensuring the views of patients and the public were considered in all stages of this programme, to help inform the thinking and decision making, providing an opportunity to take a more patient centred approach to health and care delivery. We organised patient and public group meetings with senior

members of the CONDOR research team, including two events with a total of 30 participants and two steering groups.

Recognition of the Yorkshire and Humber AHSN's contribution is formally stated in publications such as [FebriDx point of care test](#) and [COVID-19 rapid diagnostics: practice review](#).

Evaluating HN's Clinical Coaching service

With a focus on effective treatment that centred upon the needs and wishes of individual patients, the Yorkshire & Humber AHSN was invited to independently [evaluate](#) the impact of an AI guided clinical coaching model of care that supported people who had been identified as being at high-risk of needing urgent or unplanned care. The project involved engaging with 25 patients to gather their opinions and feedback about HN's clinical coaching service and concluded with the publication of a report: ['Patient feedback on the benefits of artificial intelligence-guided clinical coaching'](#).

This engagement activity has helped to improve the intervention and make the invitation to participate more appealing to those people with the greatest health and wellbeing needs.

This service is currently being provided in our region by HN Company who have developed the approach to help address the high demand on our hospital services by showing just how effective this approach can be.

The results of our evaluation work are cited, to support further funding bids by HN Company, and are incorporated into the review of current SBRI-funded programmes in Glasgow and York.

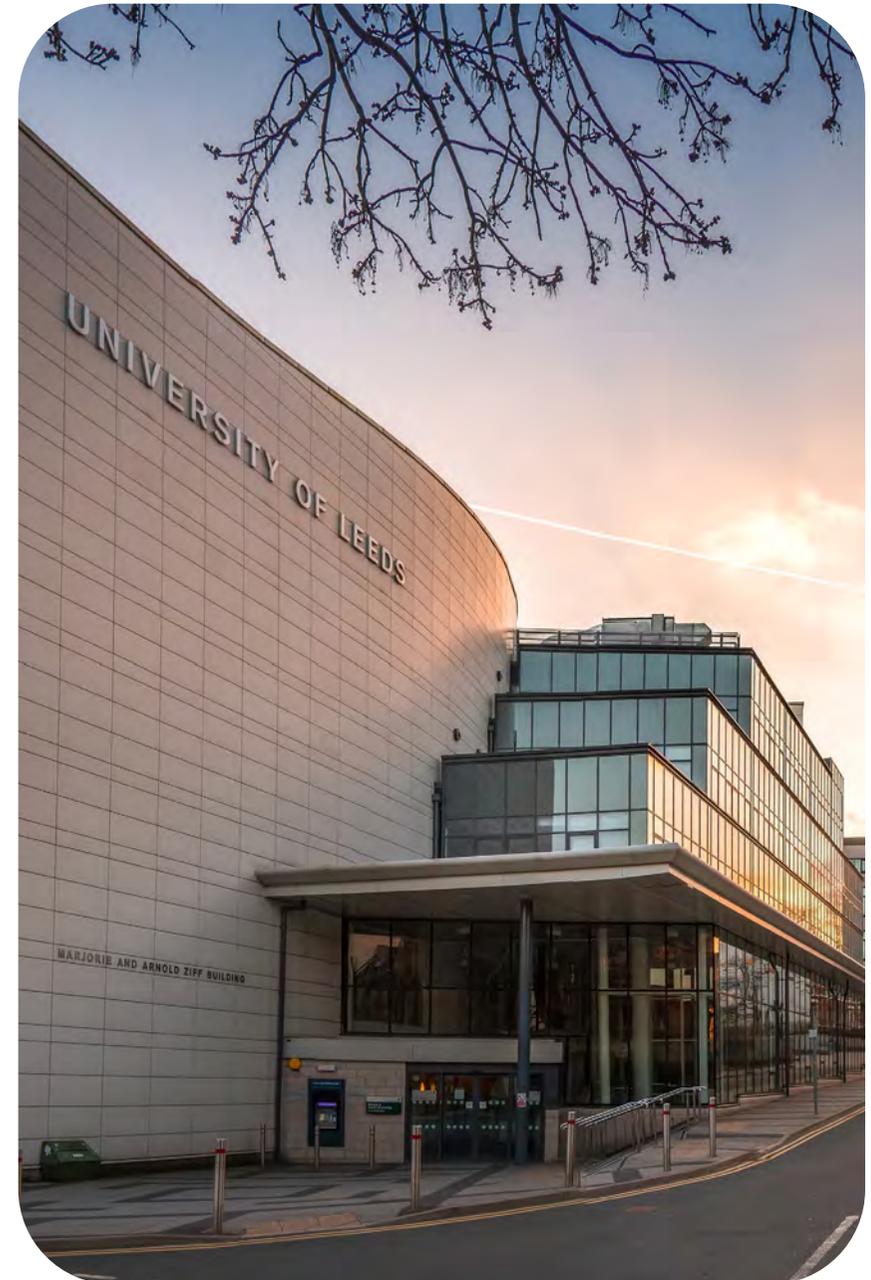




Our collaboration with University of Leeds

The current pandemic and its devastating impact on communities has been the subject of speculation as to the extent to which misinformation being shared through a variety of communication channels is disproportionately worsening the outcomes for some groups more than others. This means there is an opportunity to improve health and wellbeing by better addressing misinformation through more tailored health and care communications. This has been the approach taken by a group of academics from the [University of Leeds](#), bringing together language, human-centred design, and other multi-disciplinary skills, into a collaboration that includes Yorkshire & Humber AHSN bringing a public and patient perspective to the work. We organised four events with a total of 58 people attending and actively engaging with the research, sharing their views, concerns and ideas.

The project has been funded through the University to develop an AI tool to detect COVID-19 and vaccine-related misinformation in tweets and other sources. We organised citizen panel meetings that have added considerable value and permitted the outputs to be compared with public views and perspectives. The next step is to involve health and care staff to secure further funding to expand the development and deployment of tools to improve the effectiveness of communications.





Preventing cardiovascular disease

Heart attacks, strokes and other forms of cardiovascular disease (CVD) cause a quarter of all deaths in the UK. As a major driver of health inequalities, it accounts for a quarter of the life expectancy gap between deprived and affluent communities. Programme Lead, Jenny Hamer, explains how the Yorkshire & Humber AHSN plays a key role in supporting our three Integrated Care Systems to tackle CVD as part of their population health management approach.

The pandemic has impacted us all in different ways, placing even more importance on looking after our health and mental wellbeing, but cardiovascular disease (CVD) remains the world's number one killer.

In England, CVD is the biggest cause of death and disability and with one death every four minutes, it accounts for the largest gap in healthy life expectancy. CVD has many causes, from smoking and diabetes to high blood pressure, high cholesterol and obesity. For the first time in 50 years, premature deaths from



**Jenny Hamer,
Programme Lead**





cardiovascular disease are on the rise.

High blood pressure and high cholesterol have been identified as leading risk factors that drive mortality and morbidity from cardiovascular disease. These risk factors are high impact, but also highly modifiable. Prevention of CVD in people with hypertension requires optimal control of both blood pressure and cholesterol. Despite this, both risk factors are underdiagnosed and undertreated, and there is substantial variation across the country.

We are working closely with our three Integrated Care Systems (ICSs) in West Yorkshire, Humber and North Yorkshire and South Yorkshire, as well as with our local clinical commissioning groups (CCG) and primary care networks (PCN). We aim to take a holistic approach to CVD prevention as part of the AHSN Network's national Lipid Management and Familial Hypercholesterolaemia and Blood Pressure (BP) Optimisation programmes.

The aim of the BP Optimisation programme is to increase detection and optimise treatment of those with hypertension, while the Lipid Management and Familial Hypercholesterolaemia programme seeks to improve the management of cholesterol, increase the detection of those with Familial Hypercholesterolaemia (a genetic disorder) and optimise the use of all medicines for patients on the cholesterol management pathway. This could include the use of medications including statins, high intensity statins, ezetimibe, bempedoic acid and inclisiran within primary care, and PCSK9 inhibitors within secondary care, as clinically appropriate.

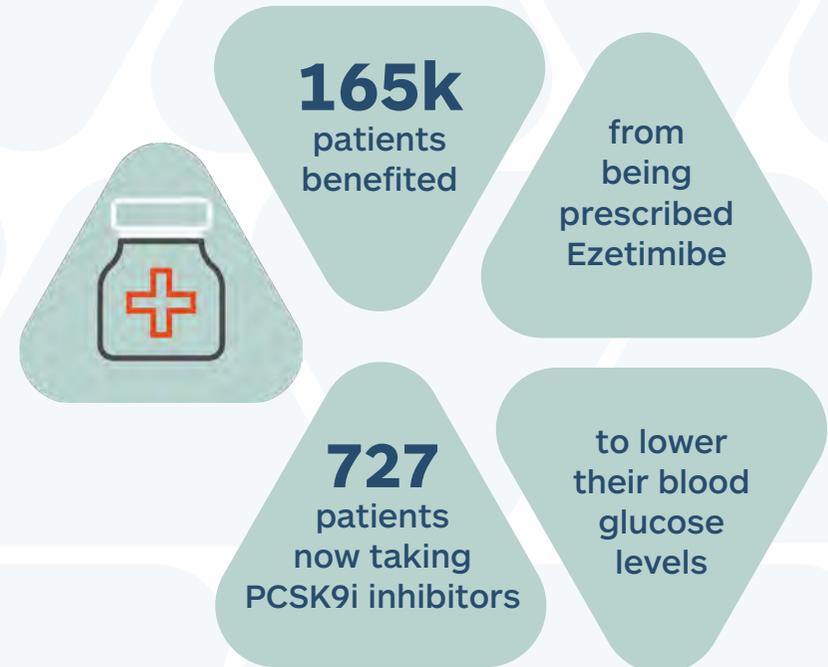
Our collaborative work to actively engage with healthcare professionals across primary and secondary care within all three ICSs has already started to have a positive impact for patients at a higher risk of experiencing a heart attack or stroke:

- We have identified 165,000 patients that have benefited from being prescribed Ezetimibe, a

medication that can help keep their high cholesterol under control.

- We have achieved 99.8% target of high intensity statin prescriptions as a proportion of all statin prescriptions.
- 727 patients are now currently taking PCSK9i inhibitors, a type of oral medication that helps to lower blood glucose (sugar) levels in diabetic patients.

Our work to tackle CVD





We are working closely with PCNs across all ICSs to support the rollout of the medication, inclisiran. The introduction of the new injectable therapy has shone a light on lipid-management pathways and its use to help lower the level of harmful cholesterol in patients at risk of having a heart attack or stroke. Inclisiran is one part of the lipid-management pathway. It will not be applicable to all patients with high cholesterol and can only be prescribed if someone has had a CVD event. However, in line with NICE guidance, for those patients where other treatments are not working effectively, inclisiran provides a new option and can reduce cholesterol levels by 50%.

In West Yorkshire, we are expanding on our work with the [West Yorkshire and Harrogate Healthy Hearts initiative](#) to ensure that lipid management is embedded into the work of PCNs, as well as aligning the national and local priorities around blood pressure monitoring.

We have actively engaged with GP practices, providing extra support

to help identify patients who are at a greater risk of heart attack or stroke as a result of not taking any medication to control their high blood pressure or cholesterol, or their medication is not being reviewed to ensure it's working effectively.

As a result of this work, almost 22,000 additional patients have been added to the hypertension register to date, where they've received a high blood pressure diagnosis and will thereby receive appropriate support. Meanwhile, 17,000 patients are now receiving treatment to reduce their risk of a future heart attack or stroke.

High cholesterol is another risk factor that can cause heart attacks or strokes if untreated. To date, our Healthy Hearts project, which helps to identify unmedicated patients who might have high cholesterol, has seen 1,800 additional patients offered a statin. An additional 11,500 patients have been reviewed by their GP to ensure their current medication is effective.



Improving people's health and saving lives is what Healthy Hearts is all about. We are delighted to see the positive difference this is making. It's heartening to know what can be achieved when we work together to scale up good practice to benefit all people living across West Yorkshire. This is what our West Yorkshire Partnership is all about."

**Dr Steve Ollerton,
Healthy Hearts Clinical Sponsor,
Clinical Lead for Primary and
Community care West Yorkshire
and GP Board member for The
Mast locality - NHS Kirklees CCG**



Throughout the year, we hosted seven webinars aimed at CVD Practice Managers, GPs, Practice Pharmacists, Nurse Prescribers and other health professionals involved in CVD management, with more than 400 people registered and providing positive feedback. The educational events aimed to provide an overview of the various national and regional resources that are available to support CVD management in primary care, including: clinical searches, data and dashboards, treatment guidance, digital solutions, support services and patient education. They also provided an opportunity to actively engage with PCNs and offer further support tailored to the needs of their communities, particularly in deprived areas.





Driving inclusive economic growth and growing our innovation ecosystem

Our Head of Strategic Operations, Dr Sean Clarkson, explains how we continue to work with partners from across the region to drive inclusive economic growth and make Yorkshire and the Humber an internationally recognised go-to place for health and life sciences innovation.

Looking back on the early stages of the COVID-19 pandemic reveals a blueprint for what the region can do when it comes together in partnership and corrals its efforts. It was also a great demonstrator of the health and innovation assets within Yorkshire and the Humber – including those already working within the sector and those which can add value to the sector – and how they form a significant critical mass when they come together.

As we look ahead to the future, it's vitally important we continue to build upon this critical mass and collaborative way of



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





working for the benefit of the region. By working together, the region has everything it needs to tackle the big challenges it is facing, be best prepared for the challenges and opportunities of tomorrow and has something to offer other regions and countries overseas. Working in a pan-sector and cross-organisational way to tackle health inequalities at place level is just one such example of the opportunity: a challenge which simply couldn't be addressed by organisations working in isolation. However, despite the unique breadth and depth of assets within the region, we mustn't be complacent, we need to continue building for the future and growing the health innovation ecosystem and its role in creating and driving an inclusive economy.

Over the past 12 months, we have worked hard to bring together regional partners at place level to better understand how to utilise the region's assets to tackle some of the big opportunities and challenges, as well as focussing on the work we're doing to continue growing and raising the profile of Yorkshire and

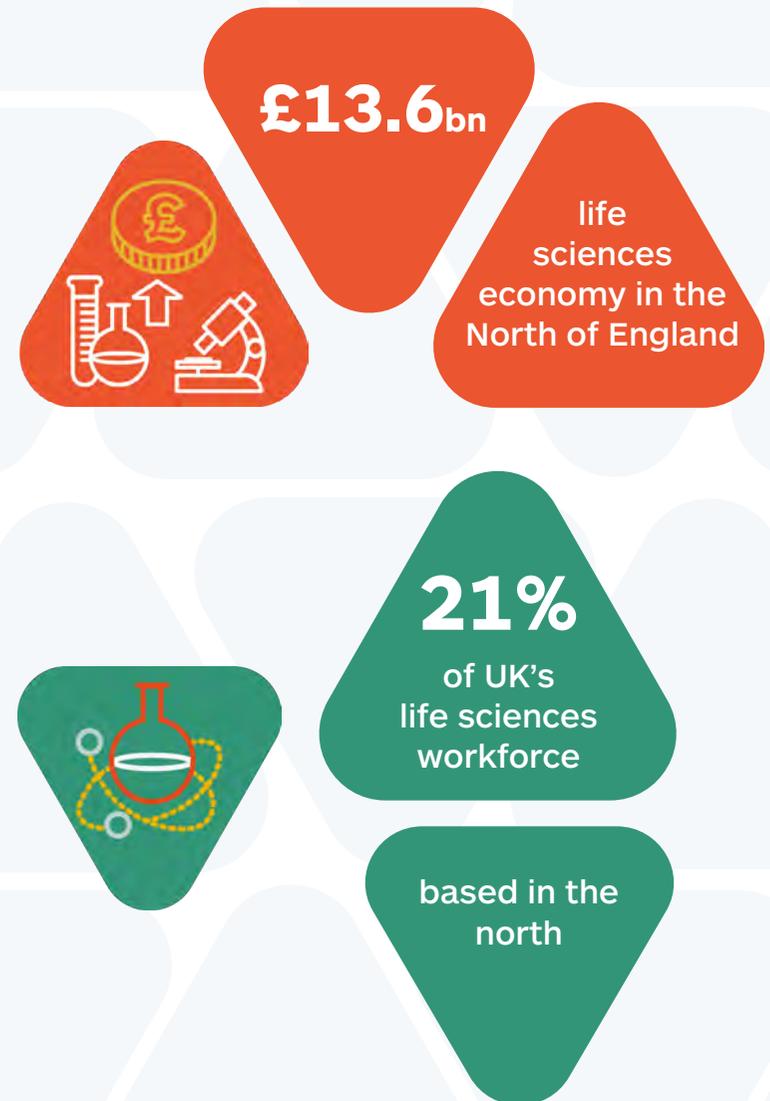
Humber's health and life sciences innovation ecosystem.

Driving inclusive economic growth

The North's life sciences economy is estimated to be £13.6bn in size and home to 21% of the UK's total life sciences workforce. However, the economic output of the region's sector could be much greater. The region's broader economy is also failing to meet its true potential: the region's GVA per head of £21,426 lags behind the UK average of £27,555. Amongst other factors, the region is being held back by the skills and health of the workforce and a lack of investment in the region, driven by long-standing regional inequalities.

A rich literature exists on the long-term economic returns and societal benefits of investing more in people's health: a healthy population is a productive and prosperous one and vice versa. The wider determinants of health – the social, economic, commercial and environmental conditions that

Life Sciences in the North





individuals and communities live and work in – are also known to account for approximately 50% of the variation in health status. The linkages between health and personal prosperity and the economy are therefore clear to see: if we invest in and focus upon one area, the other intrinsically benefits too.

The North of England has a significant cluster of activity in health and life sciences. Together, these assets have the ability to both close the gap in healthy life expectancy and level-up productivity between the North and South, but they also have the potential to drive levelling up across the whole of the UK. However, we shouldn't look to these assets just to contribute to directly improving the health of the population. Many of these assets are anchor institutions and their two-fold role shouldn't be underestimated: they also have a civic duty to invest in the health and skills of their workforce and create employment opportunities. Through doing this, they will not

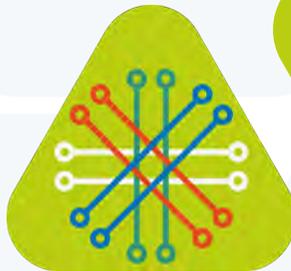
only reap the rewards in terms of their own workforce's productivity, so too will the broader region's economy.

Through our YHealth4Growth, campaign which started in 2019, we continue to raise the profile of the links between health and the economy, and the role of the economy in driving improved health outcomes and vice versa. We also continue to work with and promote the role of business and anchor institutions in tackling inequalities and improving the health and prosperity of the region. Through our unique pan-regional position we'll also continue coordinating collaborations of regional partners around this important agenda, leveraging additional investment for the region wherever possible.

Growing the Yorkshire and Humber health innovation ecosystem

Department for International Trade definitions cite over 1,300 life sciences businesses in the

The North's Life Sciences offer



1,300
life sciences
business

52k
life sciences
employees



Over
4,000
health sector
employers

in Sheffield
City Region



1 in 3
digital health
jobs

in Leeds City
Region



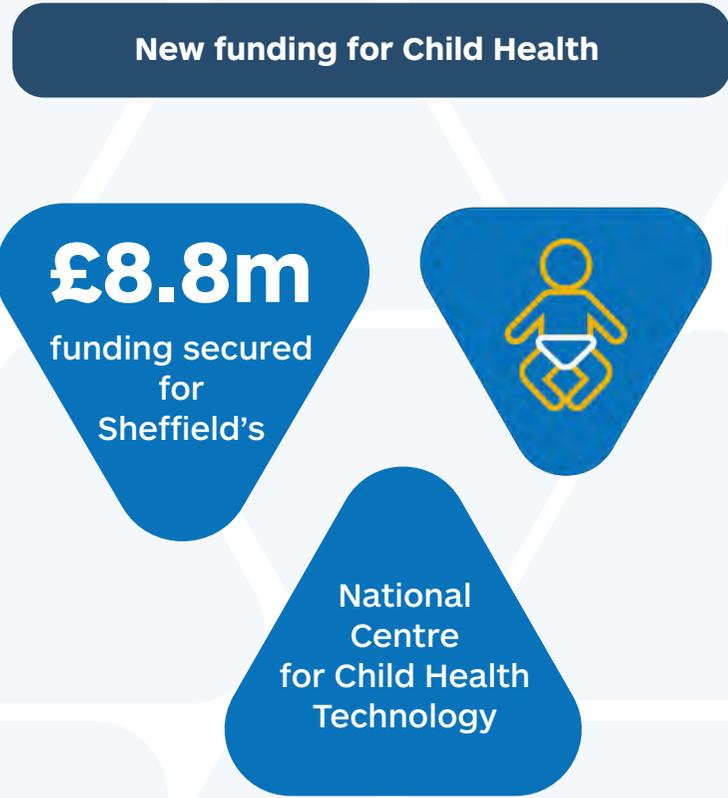
North of England, employing over 52,700 people. In Sheffield City Region alone there are over 4,000 employers in the health sector and is the region's third largest industry cluster, meanwhile 1 in 3 digital health jobs are based in the Leeds City Region. Whilst this represents a significant critical mass and has huge potential in terms of impact to the region's health and economy and the region's offer further afield, there is much more which can be done to continue growing the breadth and depth of this asset base.

We continue to work closely with regional stakeholders to grow the region's innovation ecosystem, whether it be forming collaborations around specific opportunities, or leveraging investment into the region to support regional development. As the previous section outlines, the links between leveraging investment, inclusive economic growth, and population health are clear to see. We also continue to work with national/international partners and significant multinational organisations around opportunities

to undertake research and development activities or locate themselves within the region. These opportunities typically build upon the region's existing assets, activity, and diverse population 'test bed'.

Good health starts at childhood and through focussing upon and investing in child health, there is a greater chance of positive health outcomes and increased prosperity in later life. The region already has a strong presence in child health, whether it be the region's two children's hospitals or the NIHR Children and Young People MedTech Co-operative. The region is also home to the Technology Innovation Transforming Child Health (TITCH) network, bringing together experts dedicated to transforming child health through technology and innovation. We were fundamental in developing the TITCH network and have contributed to much of their work. This includes plans for a National Centre for Child Health Technology (NCCHT) in Sheffield, which secured £8.8M of funding in the autumn budget. The centre will focus on developing the world's most advanced health innovations

for children and young people, offering clear potential benefits to the health of the region's population of tomorrow, as well as the region's economy. We look forward to continuing working closely with the NCCHT team and other regional stakeholders to further develop plans for the centre.





Raising the profile of the Yorkshire and Humber region and its assets

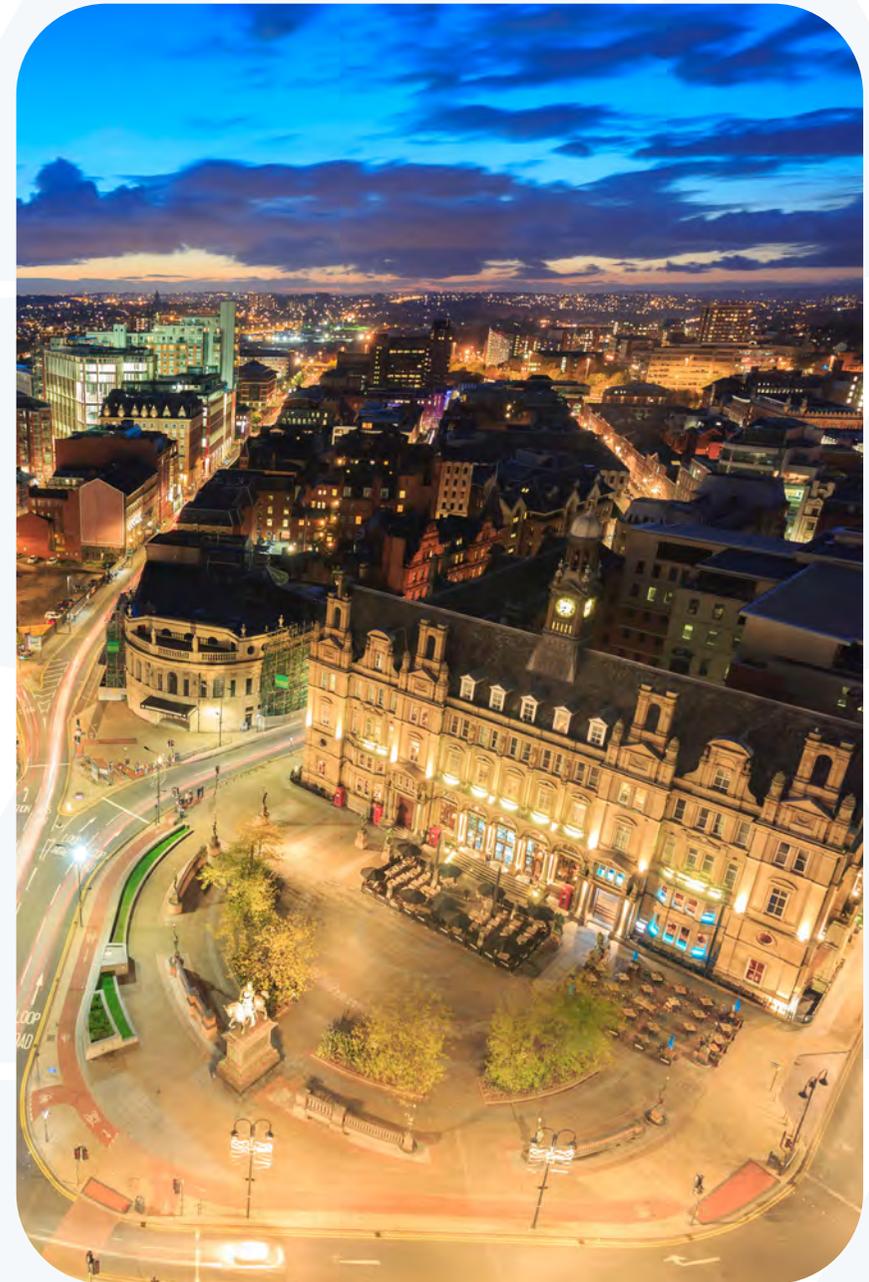
Whilst the region is home to a wealth of health and life sciences assets, many of which are world-renowned, the region as a whole fails to punch its weight in terms of recognition as a centre of excellence for health and life sciences innovation.

Much of our work seeks to improve the reputation of the region and its assets, whether it be indirectly through our work building collaborations, or through specific targeted activities. Our work with international innovators ([see page 44](#)) and health systems seeks to raise the profile of the region as a go-to place for health and life sciences innovation, seeking to drive inward investment and activity within the region. For example, our work with the Ministry of Public Health Thailand sought to raise the profile of innovators based in the UK and the region who offered digital innovations which could help address Thailand's growing mental health challenge.

Other work focusses upon better mapping and identifying the assets within our region which would benefit from an increased national/international profile and working with these assets wherever possible to help increase their reach. We also work closely with regional stakeholders to better understand the health and life sciences offer over a Yorkshire and Humber footprint, increasing the strength of the region's national and international value proposition.

Summary

Whilst the region has many deep-rooted interlinked health and economic challenges, the region is also flourishing with opportunity to address these challenges locally, as well as having a highly compelling offer to others. We will continue working closely with regional stakeholders to capitalise on the region's potential for the benefit of the population's health and prosperity, as well as continuing to spread the region's offer to national and international stakeholders to drive investment and activity.





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