



Yorkshire
& Humber
AHSN

Transforming Lives Through Innovation

Impact Report 2019-20



Part of
TheAHSNNetwork

Photo credit: Welcome to Yorkshire





Photo credit: Welcome to Yorkshire

Transforming Lives Through Innovation

Yorkshire & Humber AHSN's vision is to improve the health and prosperity of our region by unlocking the potential of new ideas.

We exist to encourage innovation in health and care and to stimulate growth in the life sciences and industry.

Our role is to act as a bridge between the health and care system, industry innovators and academic researchers. We connect these sectors across the entire product and service life cycle to ensure that the impact and benefits of innovation are realised by NHS and social care organisations.

We work to meet the needs of people in our region and beyond. We ensure that new products and services are supported by evidence and designed in consultation and collaboration with all our stakeholders.

What we do breathes life into innovations that improve care, effectiveness and efficiency in the NHS and social care.

- We help the health and care workforce as they introduce new ways to make care safer and better for patients.
- Our work with the life sciences sector and academic researchers helps focus their efforts on meeting genuine healthcare needs and ensures that their findings are implemented.
- When we introduce healthcare organisations to the industry innovators and entrepreneurs who can help them most, we generate new business opportunities and the new jobs that come with them.
- We are trusted to break down barriers by convening stakeholder meetings and fostering a spirit of collaboration and partnership.

Because we understand the unbreakable link between health and economic prosperity, we will accelerate our work to join up all parts of our region with the health and care system to enable transformational change.

We believe in the power of new ideas to improve lives. Our purpose is to make life better for the people of Yorkshire and the Humber by improving their health and care and by creating a thriving economy for the benefit of all.



Introduction

Welcome to our Impact Report for 2019-20.
The last 12 months have been incredibly busy and productive for Yorkshire & Humber AHSN. This report sets out the progress we've made and highlights just a few of our achievements and successes.



Although the purpose of this report is to reflect on the events across the whole of the last year, it is impossible not to recognise the enormous impact that the COVID-19 pandemic made at the very end of our reporting period and acknowledge that the road ahead for the people living and working in our region is an extremely challenging one.

Since the pandemic began to take hold in the final month of our financial year, we've been listening to the needs and challenges being faced by our healthcare system stakeholders and rapidly realigning our work and priorities to support them.

As an organisation we have been able to maintain our own operations and transition all our staff to home working quickly and seamlessly, calling our own "lockdown" and home working arrangements on the 13th of March 2020, some 10 days ahead of the national call from the government.

The work we've done in our organisation over the last 12 months to embed our values and behaviours and to foster a culture of support for each other has been just as crucial a factor in our successful move to remote working as has been our investment in IT systems and equipment. As a result, we have been able to make the safety and wellbeing of our colleagues our top priority without breaking our stride operationally.

As we look back at our successes in 2019-20 we would like to thank all our partners and stakeholders, without whose active collaboration and fantastic support we could not have achieved the scale of our results. We've worked hard to maintain and strengthen our relationships with all our stakeholders, particularly our three local health and care systems, and so we were delighted to hear the news that Humber Coast and Vale was recently awarded Integrated Care System status.

Despite COVID-19 disrupting the closing stages of many of our programmes we still managed to deliver a very successful year. You'll find details about all of our impacts in this report but we're particularly proud of our:

- Atrial Fibrillation (AF) programme which has identified over 8,000 patients with AF and as a result we estimate that 267 people did not have a stroke because they received protective medicines
- Transfer of Care Around Medicines (TCAM) programme which as well as leading to better outcomes for patients, we estimate has saved the NHS in our region over £20m
- ESCAPE-pain programme which has helped over 1,000 people in our region to manage their chronic joint pain, transforming their quality of life

These successes mean that we've played our full part in the enormous impact that the 15 AHSNs have made collectively. Over the last two years the Network has demonstrated that the adoption and spread of national innovations and evidence-based practice can be achieved at a progressive pace and on an expanding

scale, and we've now firmly established ourselves as the expert facilitators who make this happen.

Other important collaborations with partners include our work with the NHS Confederation and the Yorkshire Universities group on the first-ever YHealth for Growth conference in December 2019. The event brought together senior leadership from across the region to explore the role of health in economic and inclusive growth. This agenda will clearly be even more important in the aftermath of COVID-19.

In September we led on the publication of a report on behalf of the AHSN Network about the importance of diversity in innovation. The report celebrated the work of Black, Asian and Minority Ethnic (BAME) innovators and also featured a series of pledges which all the AHSNs committed to. These pledges will shape the way that we identify and nurture innovation and the innovators behind them in the future. Our work in this important area will continue in the year ahead.

Looking towards the coming challenges, we will continue to implement initiatives which

can help in the fight against COVID-19 as well as developing new work to help the NHS in its reset and recovery efforts once the crisis subsides. Our priority throughout will be to provide the support our local healthcare systems need and ask for. The coronavirus pandemic has undoubtedly highlighted the pressing need for us to continue with the transformation of our health service and we feel our mission is more important than ever before.

Finally, we would like to say a huge thank you to all our many partners and stakeholders for their continued support and to all our staff for their hard work, resilience, and enthusiasm.

Richard Stubbs,
Chief Executive Officer



**Professor William
Pope, Chair**

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 this year marks the end of some of our two-year long, nationally commissioned programmes of work, we've calculated the benefits we believe the work that appears in this document has delivered for our region. Since April 2018 at least:

have benefitted from better, safer care or experienced improved health outcomes

103k patients



has been saved by health and care organisations

£72.4m



industry innovators have received our support

526



Better, safer care and improved health outcomes

We help the health and care workforce as they introduce new ways to make care safer and better for patients. Together, we've provided better care to thousands of patients and helped others lead healthier lives.



Preventing life-changing strokes

Atrial Fibrillation (AF) causes devastating strokes every year with one in every 20 sufferers left with a life-changing disability. Since April 2018, we have identified over 8,000 patients with AF and protected an extra 6,664 AF patients with anticoagulation drugs. As a result of this increased anticoagulation, it is estimated that 267 people with AF did not have a stroke because they received protective medicines.



During 2019-20 we continued to provide support to 260 GP practices across Yorkshire and the Humber to improve their ability to detect people who have AF and protect them with anticoagulation therapy from potentially devastating AF-related strokes. Our project has issued over 600 mobile electrocardiogram devices to help identify AF cases across the region.

The National Quality Outcomes Framework (QOF) data for 2018-19 shows that this work has contributed to an increase of 8,000 patients being recorded on GP's AF registers across the region and our work with practices to improve the treatment for AF patients has seen an additional 6,664 patients now receiving anticoagulation therapy. This could potentially prevent an estimated 267 AF - related strokes within the region.



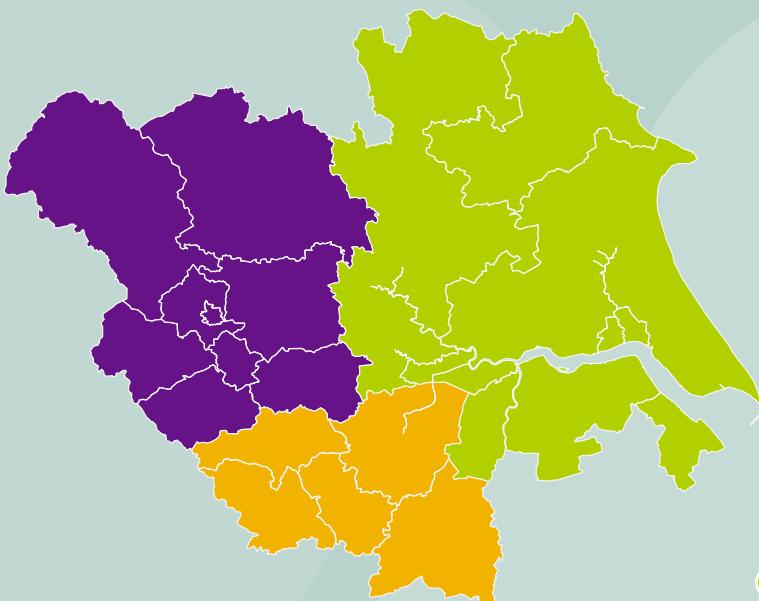
We have been recognised in the prestigious Health Service Journal Partnership Awards 2020, for our innovative joint working project with Bayer on AF detection and protection in the West Yorkshire and Harrogate Health region. This project was a finalist for the category 'Best Pharmaceutical Partnership with the NHS'.

Our joint working with Bayer led to 128 GP practices in West Yorkshire and Harrogate taking part in our programme. This helped the area to detect 3,125 previously unknown cases of AF and increase the number of patients receiving anticoagulation by 3,539, preventing an estimated 142 AF strokes.

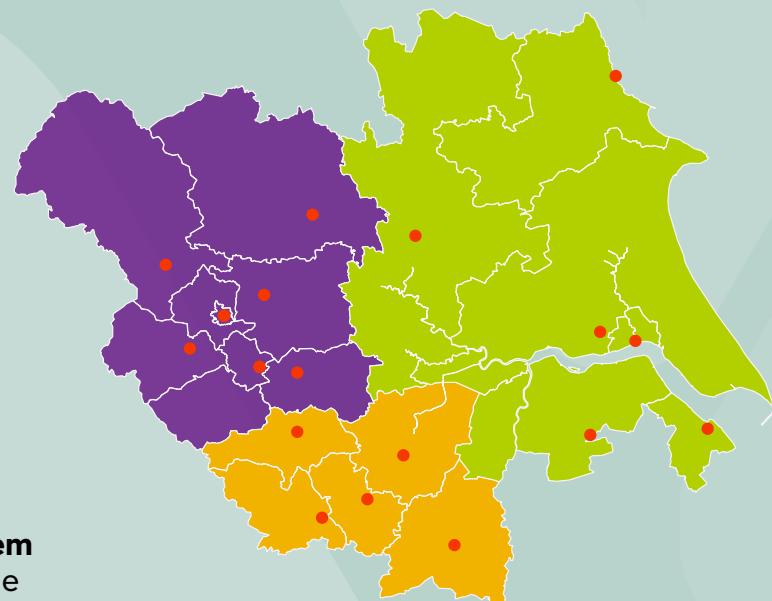
As a legacy of our improvement work a national [AF Toolkit](#) is available for healthcare professionals to support clinicians in continuing to make improvements to the detection and care of AF patients.

Adoption of the AF programme in the Yorkshire and Humber region 2018-20:

April 2018



March 2020



Integrated Care System

- Humber, Coast and Vale
 - South Yorkshire and Bassetlaw
 - West Yorkshire and Harrogate
-
- Clinical Commissioning Groups taking part in the AF programme

Identifying patients at risk from their prescriptions

Prescribing errors in general practice can put patients at risk. Our work implementing the PINCER programme aims to identify patients who may be at risk from their medication and put actions in place to keep them safe. The number of GP practices using PINCER in our region has risen from 136 in 2019 to 217 in 2020.

217

GP practices using PINCER



PINCER allows primary care pharmacists and technicians in GP surgeries to audit and identify patients at clinical risk from their prescriptions and act to correct these problems. This will increase the quality of life for both patients and their families by, for example, decreasing the number of gastrointestinal bleeds and hence the number of preventable hospital admissions and deaths.

Prescribing errors in general practice are an expensive, preventable cause of safety incidents. Research shows that serious errors affect one in 550 prescription items, while hazardous prescribing in general practice contributes to around one in 25 hospital admissions.

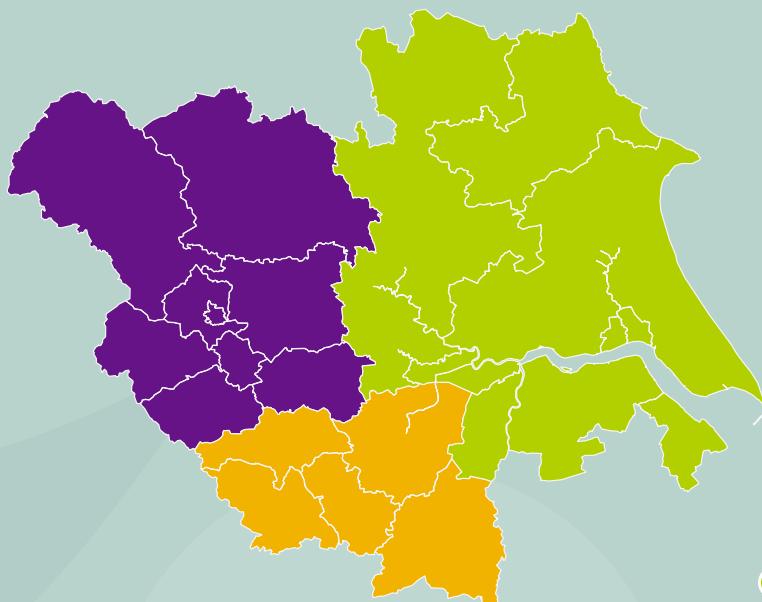


The PINCER intervention involves using computerised prescribing safety indicators to search GP clinical systems, identifying patients who are at risk from their medications and establishing action plans to improve systems and reduce the risk to patients.

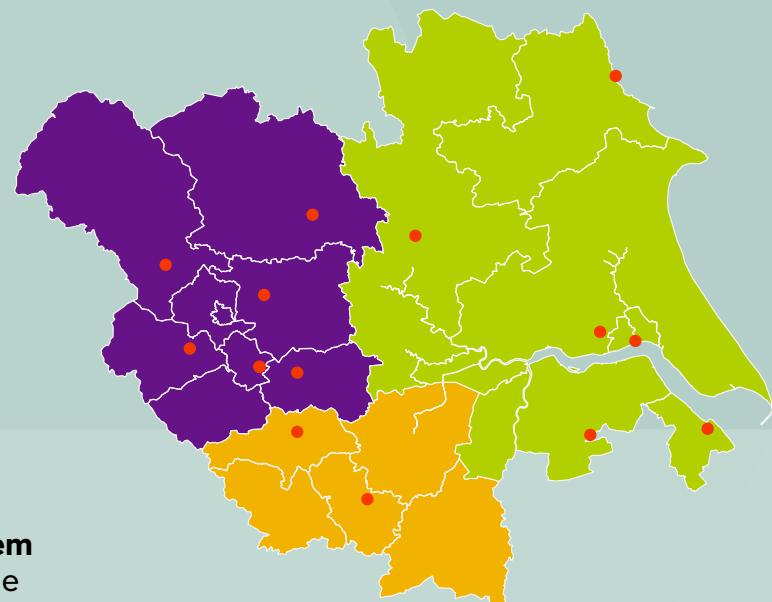
We continue to support both Clinical Commissioning Groups and practices to ensure the sustainability of PINCER using their own trained pharmacists.

Adoption of the PINCER programme in the Yorkshire and Humber region 2018-20:

April 2018



March 2020



Integrated Care System

- Humber, Coast and Vale
- South Yorkshire and Bassetlaw
- West Yorkshire and Harrogate
- Clinical Commissioning Groups taking part in the PINCER programme

Helping people with chronic joint pain stay active

More than 1,000 people have participated in our ESCAPE-pain education and exercise programme to manage their joint pain and transform their quality of life. The programme has been delivered in 48 sites across the region.

Osteoarthritis costs the NHS £5bn annually. It affects around a third of the population aged 45 and over in the UK - around 8.75m people. One in three GP appointments are estimated to be related to joint pain.

ESCAPE-pain is an education and exercise programme for people with chronic joint pain of the knees and/or hips that helps them take control of their pain, manage their condition, and return to a more physically active life.

“I am feeling a lot more optimistic about the future and I have kick started my fitness again - it feels good.”

Since we started to roll out the programme across the region we have helped more than 1,000 people transform their lives by working with Clinical Commissioning Groups, NHS Trusts, leisure centres and other providers who support those with muscular-skeletal conditions to enrol onto this very powerful programme.

Robust evaluation shows that ESCAPE-pain reduces healthcare utilisation costs. This includes savings in medication, community-based care (including GP

appointments), and secondary care services. An independent report undertaken by Public Health England states that ESCAPE-pain has a positive financial return on investment of £5.20 for every £1 spent.

Not only does it have economic benefits, the programme relieves pain, helps to improve anxiety and depression, aids weight loss, helps to reduce reliance on pain medication and can reduce the necessity for knee or hip operations.



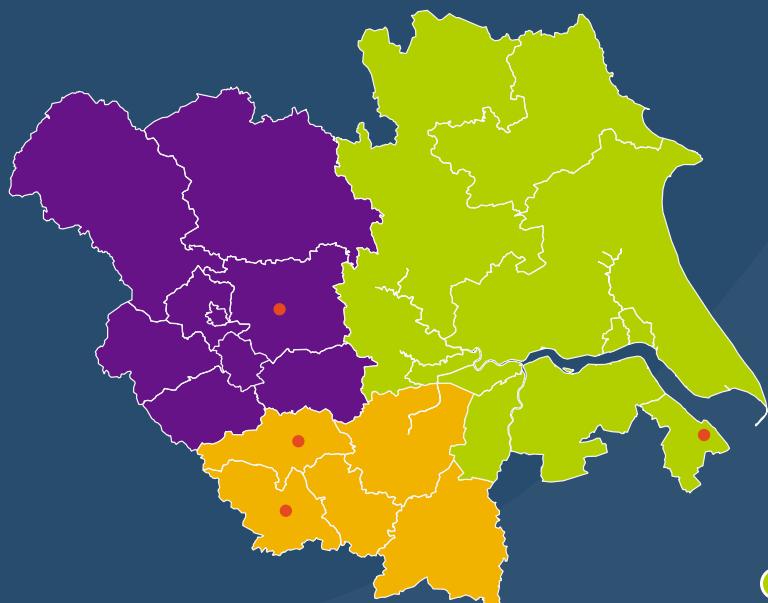
ESCAPE-pain has been delivered at 48 sites in the region, including hospitals and community clinics, leisure centres, and community settings – even a golf club. As part of this we have funded the training of 130 physiotherapists and fitness instructors who deliver the programme.

ESCAPE-pain provides 12 sessions of exercise and education (two classes a week over six weeks), which integrates simple education, self-management, and coping strategies, with an exercise regimen that is personalised for each participant.

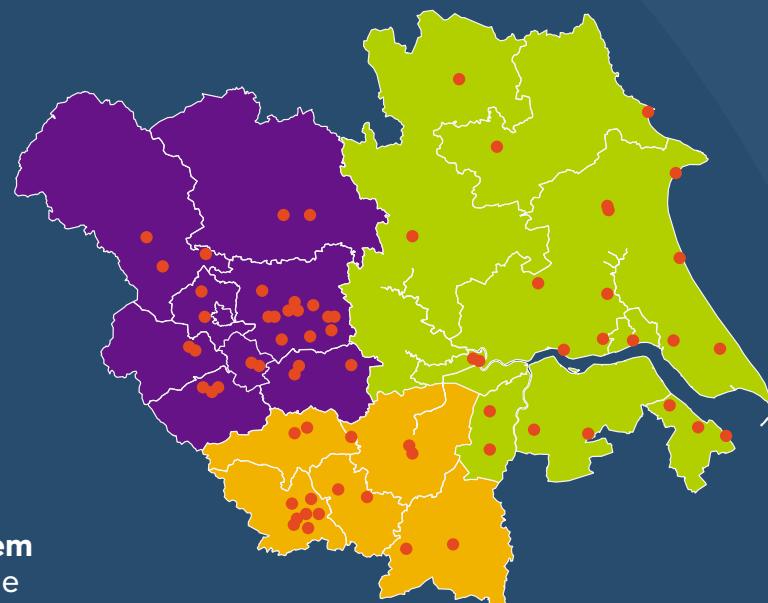
People who have taken part in the programme speak of the emotional and social wellbeing that they have experienced, as well as improvement in physical function and ability to cope better with pain.

Adoption of the ESCAPE-pain programme in the Yorkshire and Humber region 2018-20:

April 2018



March 2020



Integrated Care System

- Humber, Coast and Vale
- South Yorkshire and Bassetlaw
- West Yorkshire and Harrogate
- Sites that have run
ESCAPE-pain training

Reducing complications and mortality rates from emergency surgery

More than 1,800 patients undergoing emergency bowel surgery have reduced their risk of post-operative complications, lengthy stays in hospital and death thanks to the improved standards of care promoted by our Emergency Laparotomy Collaborative (ELC) programme.

Over 30,000 patients in England each year undergo emergency laparotomy, or bowel surgery, which costs the NHS an estimated £650m. Of these patients, approximately 15% die within 30 days of surgery, and more than 25% remain in hospital for at least 20 days.

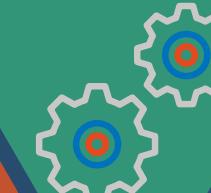
Our work involved the spread and uptake of the evidence-based Emergency Laparotomy Pathway Quality Improvement Care bundle. This brought together staff across all Yorkshire and Humber's acute hospital trusts, from emergency departments, radiology, acute admission units and surgical wards, to theatres, anaesthetics and intensive care.

Twelve trusts have already shared their data from December 2018 to November 2019. This data, for 2,333 patients, has helped everyone involved in the Collaborative gain a greater understanding of the regional picture, identify areas of excellent practice, and target areas for improvement. The early signs are that the mortality rate for 2018-19 was 8.36%, compared to the national mortality rate for 2017-2018 of 9.6%.

We will continue with this important work until at least April 2021.



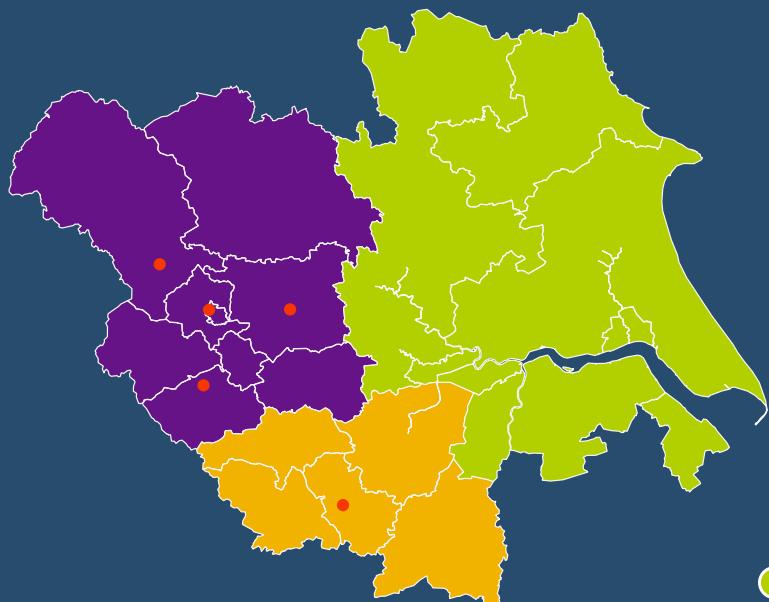
1800
Patients



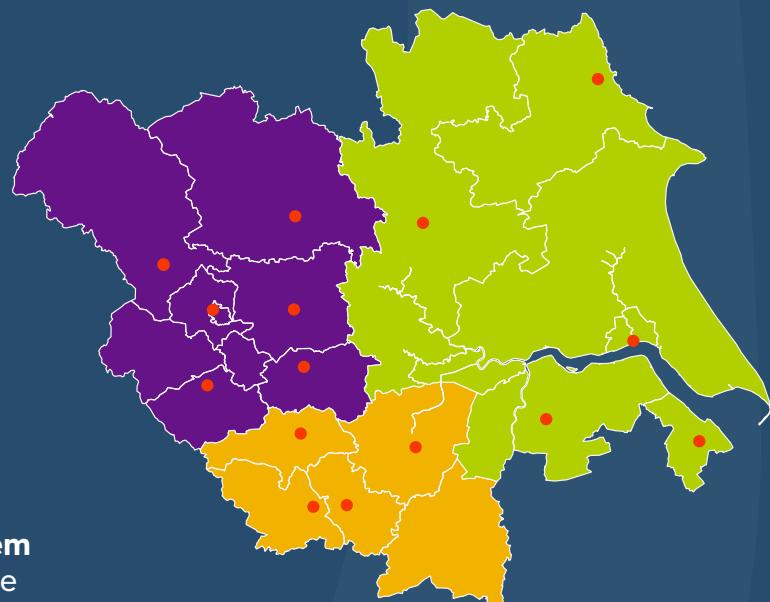
at reduced
risk of
complications

Adoption of the Emergency Laparotomy Collaborative programme in the Yorkshire and Humber region 2018-20:

April 2018



March 2020



Integrated Care System

- Humber, Coast and Vale
- South Yorkshire and Bassetlaw
- West Yorkshire and Harrogate
- Hospital Trusts taking part in the Emergency Laparotomy Collaborative programme

Reducing heart attacks and strokes in West Yorkshire

Thousands of patients are at a reduced risk of having a cardiovascular disease incident, such as a heart attack or stroke, as a result of the Healthy Hearts project we are delivering with the West Yorkshire and Harrogate Health and Care Partnership (WYH HCP).

The Healthy Hearts project supports the Partnership's ambition to reduce cardiovascular disease incidents by over 10% by 2021. This will prevent an estimated 350 strokes and 800 heart attacks, bringing savings to the health and care economy of over £12m.

The project aims to improve care by making better use of existing primary care resources and maximising clinical engagement. It draws significantly on learning from Bradford's successful Healthy Hearts campaign.

Since the beginning of the project:

- Approximately 17,500 additional patients are having their blood pressure controlled to less than 140/90
- An extra 10,000 patients have been added to hypertension registers

These figures were provisional at the time of publication.



Innovation Technology Tariff and Innovation Technology Payment programmes

Delivered in partnership with the AHSNs, the Innovation Technology Payment (ITP) and its predecessor, the Innovation and Technology Tariff (ITT), supports NHS England's commitment to accelerate the adoption and spread of proven and affordable innovations and remove financial, procurement or operational barriers to the uptake of products and technologies.

We have formed excellent working relationships with the companies who are on the ITT and ITP programmes, developing a sound understanding of their products and the benefits they offer.

This has enabled us to act successfully as their champions with the NHS organisations in our region. The impact of these excellent working relationships can be seen in the progress we have made in spreading the adoption of many of the ITT and ITP innovations. Details of some of these are included over the next few pages of this report.

Safer care for mums during childbirth

Childbirth was made safer for more than 2,500 women in 2019-20 thanks to the use of the EpiScissors-60 device which reduces the risk of obstetric injury during childbirth. Over 7,000 women in our region have benefitted from this device since our work to champion its use began in 2017.

A mother's life can be severely affected if she is among the 30,000 UK women a year who suffer obstetric anal sphincter injuries (OASIS) during childbirth. Many cases are caused by clinicians misjudging the angle of surgical cuts during childbirth – and result in direct annual costs to the NHS of £55m. The use of the EpiScissors-60 means that the angle of surgical cuts is easier for clinicians to assess and leads to safer care.

Reducing the risk of serious medical errors

The risk of serious, preventable and costly medical errors has been reduced through the use of over 18,000 Non-Injectable Arterial Connectors across Yorkshire and the Humber in 2019-20.

The Non-Injectable Arterial Connector, developed by NHS clinicians, is designed to stop medication accidentally going into the arterial line that is used to monitor patients in intensive care units and operating theatres. It also prevents arterial line infections, eliminates accidental blood spillages during sampling, and protects both patients and staff.

We have helped promote this simple device which is preventing thousands of potential errors in intensive care units and operating theatres.



Fewer side effects for prostate surgery patients

This year 164 men underwent prostate surgery using the Urolift procedure as a result of our work to encourage trusts to adopt this innovation. These patients were treated as day cases, reducing the need for overnight stays and the associated costs for the six hospitals that have now adopted the procedure in our region.

Urolift is an alternative surgical procedure for benign prostatic hyperplasia. This is a common and chronic condition where the enlarged prostate can make it difficult for a man to pass urine, leading to urinary tract infections, urinary retention, and in some cases, renal failure.

The procedure is increasingly carried out under a local anaesthetic, and patients can go home after a few hours, typically without a catheter and they are normally followed up with a phone call. They experience significantly fewer side effects, notably no risk of permanent sexual dysfunction or post-operative complications such as infection and bleeding, compared with existing alternatives.



Improving bowel cancer detection rate

Over 7,000 Yorkshire and Humber patients across 10 sites in the region have benefitted from an improved Adenoma Detection Rate (ADR) and cancer detection in 2019-20. This has been achieved by improving colonoscopy performance by using Endocuff Vision.

Endocuff Vision is a medical device that attaches to an endoscope to improve colorectal examination for patients undergoing bowel cancer tests. Bowel cancer is the fourth most common cancer in England with 34,000 people diagnosed each year. For every 1,000 patients treated it is estimated that six cases of cancer could be avoided through use of this device.

Making sure good ideas get used as quickly as possible

The Accelerated Access Collaborative is a partnership of patients, government, industry and NHS bodies that works together to streamline the adoption of innovations in healthcare. The Collaborative has identified a range of products and services as 'Rapid Uptake Products' which could swiftly improve outcomes for patients, and we have supported their regional uptake where they meet the needs of our NHS stakeholders.



Rapid Uptake Products include:

- **PCSK9 inhibitors:** used for the treatment of very high cholesterol and used together with a statin-type cholesterol-lowering medicine, or used for those who are unable to take or tolerate a statin.
- **Urolift:** a minimally invasive procedure for treating lower urinary tract symptoms of benign prostatic hyperplasia.
- **Placental growth factor based tests:** help predict the risk of pre-eclampsia quickly so that pregnant women receive the most appropriate care.
- **High-sensitivity troponin tests:** are used in an early rule out protocol for people with chest pain and suspected acute coronary syndrome.
- **HeartFlow analysis:** creates a 3D model of the coronary arteries to help clinicians rapidly diagnose patients with suspected coronary artery disease from coronary CT angiography.
- **Quantitative faecal immunochemical tests:** support patient risk assessment in suspected colorectal cancer.
- **Cladribine:** an oral treatment given as two treatment courses, one year apart, for treating highly active relapsing-remitting multiple sclerosis in adults.

Several NHS organisations in our region have received Pathway Transformation Funding to help implement these products. For example, we worked with the Greengates Medical Group in Hull for its PCSK9 inhibitors project. We helped the practice to create a successful application for funding along with a project plan and outline metrics.

Working in collaboration with Hull University Teaching Hospitals NHS Trust, the practice has introduced a specialist service led by a pharmacist. This identifies patients with high cholesterol who could benefit from a referral to Hull University Teaching Hospitals, where PCSK9 cholesterol inhibitors may be prescribed when clinically relevant.

Reducing the need for invasive angiogram tests

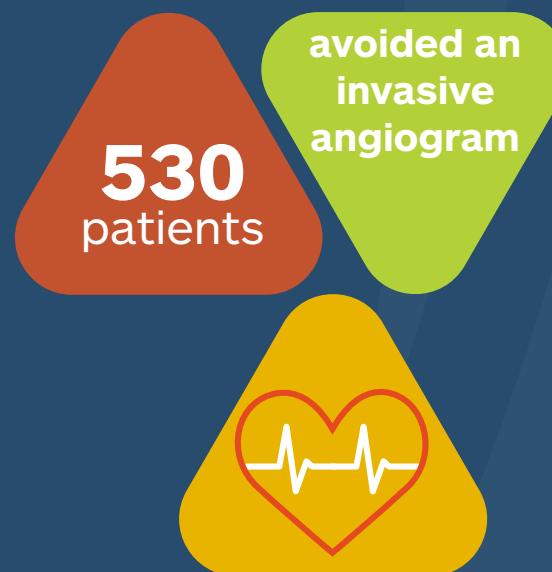
Hundreds of patients have avoided the need for invasive angiograms thanks to our work spreading knowledge of the HeartFlow diagnostic which provides non-invasive detection of coronary artery disease.

The HeartFlow procedure creates a personalised, scanned 3D model of the coronary arteries and analyses the impact that blockages have on blood flow. It enables clinicians to identify significant coronary artery disease and determine the optimal treatment pathway without always having to use an angiogram test.

Over 800 uses of HeartFlow have been reported to NHS England by four trusts in our region which have adopted the procedure – Hull, Sheffield, Leeds, and most recently Bradford – with 650 scans carried out in 2019-20. NHS England predicts a 55% reduction in patients who would otherwise have needed an angiogram, saving over £370,000 based on the NHS Tariff.

Trusts implementing HeartFlow benefit from funding under the NHS Innovation Technology Payment programme. We are supporting Trusts to produce business cases for continuing to use HeartFlow when this funding ends.

Statistics show that more than half the patients who undergo invasive angiogram tests have no significant coronary blockage and HeartFlow can therefore significantly cut healthcare costs and improve patient experience and quality of life. The hospitals using HeartFlow have also seen reduced waiting times for diagnostic tests of coronary heart disease.



Improving diagnosis and management of pre-eclampsia

Over 150 women were safely discharged from hospital thanks to the implementation of Placental Growth Factor Testing which is used to help diagnose pre-eclampsia.

Pre-eclampsia is a condition that affects some pregnant women, usually during the second half of pregnancy. It causes high blood pressure and protein in the urine and, if not diagnosed and closely monitored, it can lead to potentially life-threatening complications.

Since the test was implemented in October 2019, it has led to improvements in diagnosis and management of women with the condition. The test eliminates the risk of poor prediction of pre-eclampsia and reduces the risk of unnecessary hospitalisation for women who will not go on to develop the condition. This creates the potential to free up hospital beds and provides both an improved patient experience and financial benefit for the NHS.

Reducing health and care costs

Over the last 12 months we've worked hard with our stakeholders to reduce costs and improve efficiencies in health care through our innovative programmes. Together, we've helped healthcare organisations in our region save millions.



Supporting people with complex mental health needs

Serenity Integrated Mentoring (SIM) is a new model of care that uses specialist police officers within community mental health services to help support high intensity users who are struggling with complex behavioural disorders. We estimate that our implementation of SIM in Doncaster will save their police, ambulance, emergency department and mental health services between £200,000 and £300,000 within the first 12 months of going live.

At least
£220k

within
first 12
months



The mentoring of ten high intensity service users in the Doncaster area has resulted in a reduction in A&E attendances and the number of 'Section 136' orders applied. (These give police the power to remove a person from a public place and take them to a place of safety when they appear to be suffering from a mental disorder). We are now working to set up a SIM team in Wakefield.

The aim of the SIM programme is to improve quality of life for the service users involved and to provide a consistent framework approach to managing the care of service users across organisations and reduce costs to the local healthcare and police organisations.

SIM carefully selects and trains police officers and police staff to work alongside their clinical colleagues. Together they learn about the trauma and triggers that lead to high intensity behaviour, they discuss how best to manage risk and how to ensure that the service user does not keep on repeating the same high risk, harmful behaviour.

Health economic analysis has demonstrated that this type of intensive crisis behaviour can cost police, ambulance, emergency departments and mental health services between £20,000 and £30,000 a year per patient. It is estimated that there are 2,000-2,500 people across the UK who place these repeat demands upon services.

Reducing the risk of cerebral palsy in preterm babies

Up to
£30m
saved

in cerebral
palsy care
costs



As a result of ensuring that eligible preterm mothers received a dose of magnesium sulphate during childbirth, we estimate that six cases of cerebral palsy have potentially been prevented – saving our region approximately £30m in lifetime care costs.

Babies born too soon are at an increased risk of developing cerebral palsy, the name for a group of lifelong conditions that affect movement and co-ordination. Since November 2018, we have been working closely with all three of the Local Maternity Systems in our region to hold launch events, engage with local maternity teams, and support them to implement the PReCePT (Prevention of Cerebral Palsy in PreTerm Labour) programme.

Magnesium sulphate is given to mothers in preterm labour to protect the baby's brain. Research has shown that for every 37 eligible mothers given the drug, one baby will potentially avoid being born with cerebral palsy. The intervention itself is inexpensive, just over £1 a dose, while the potential lifetime cost of care for someone born with cerebral palsy is estimated to be around £5m.

PReCePT 'Champion Midwives' were recruited in all Trusts across our region. They have been key to the success of the programme thanks to their knowledge, skills and enthusiasm.

Although our work on this programme ended in March 2020, all three local Maternity Systems continue to support their maternity units to make sure the potential prevention of cerebral palsy continues in the future.



Medicines support to reduce re-admissions

Since April 2018, we estimate that system savings of over £33m have been made by supporting patients who have been discharged from hospital and need extra help taking their prescribed medicines. This may be because they've had changes to their prescription, have started something new, or just need a bit of help to ensure they are taking their medicines safely and effectively.

Our Transfer of Care Around Medicines (TCAM) programme has ensured that patients are referred through a safe and secure digital platform to their local community pharmacist when they are discharged from hospital. The initiative has shown that patients who see their community pharmacist after they've been in hospital, are less likely to be re-admitted and, if they are, will have a shorter length of stay and remain in a better state of health.



There are nine trusts (eight acute trusts and one mental health trust) across the region now using TCAM. Community pharmacists have completed over 10,000 referrals made by the trusts between April 2019 and March 2020 and in addition to the £20m system savings, we estimate that there will have been over 2,000 fewer re-admissions and 56,000 fewer bed days.

Support for industry innovators

A central element of our role is to encourage innovation in health and care and to stimulate growth in life sciences and industry.

When we introduce healthcare organisations to the industry innovators and entrepreneurs who can help them most, we generate new business opportunities and the new jobs that come with them.

In the last two years we have supported 526 companies to help them understand the healthcare challenges in our region and what they need to do to engage successfully with NHS organisations.



Connecting the NHS with industry innovators

The AHSNs were established to provide a bridge between industry innovators and health and social care organisations. To help us achieve this goal in our region, we've connected many industry innovators and NHS stakeholders face-to-face at our Innovation Exchange series of events. Over the last 12 months, we've hosted 14 events on various topics to explore challenges faced by our local healthcare systems and promote better understanding of these in industry.



We've also run events that support companies as they develop their ideas, as well as showcase events, which provide NHS stakeholders with an overview of specific products and services which are available to address a particular need.

Highlights from 2019-20 include:

- A workshop held with NIHR Devices for Dignity to explore unmet needs in diabetes and inform future areas of focus.
- Two workshops with the NIHR Leeds In-vitro Diagnostics Medtech Co-operative and the Biomedical Research Centre at Leeds Teaching Hospitals NHS Trust to explore unmet needs in musculoskeletal conditions. The first focused on the patient's perspective. For the second, we partnered with Grow Medtech to generate ideas for potential solutions which could be developed into research projects or product design.

- Responding to system need to enhance the monitoring of patient pathways, we held a 'Fully Connected Perfect Patient Pathway' event. Building on the knowledge obtained from the implementation of the Scan for Safety Programme at Leeds Teaching Hospitals, the event highlighted the problems faced by NHS trusts in tracking a patient's journey and the location of mobile equipment, and showcased some of the technologies that are available to improve monitoring and safety.
- We worked with the Humber, Coast and Vale Health and Care Partnership on their Outpatients Transformation Programme. A number of clinical areas were identified as a priority to better meet patient's needs, including alternatives to face-to-face outpatient appointments. We worked with the partnership to identify the best companies and solutions and bring them together in an event to select improvements they could test.



As part of our ongoing commitment to work with industry partners and health tech innovators, we have also supported the AHSN Network's 'Bridging the Gap' series of events. These aim to provide innovators with the information that they need to support them in generating evidence, building a business case and understanding NHS needs.

Our Health Innovation Exchange website also brings NHS organisations and industry innovators together. It provides innovators with a platform from which to share information about their technologies, and NHS organisations with an opportunity to find solutions to their challenges.

The Innovation Exchange is an AHSN Network co-ordinated approach to identifying, selecting and supporting the adoption of innovations that improve patients' lives as well as boosting our economy.

Driving the adoption of digital innovation across the north

The Digital North Accelerator programme is a joint project launched by the four northern Academic Health Science Networks – Yorkshire & Humber, Health Innovation Manchester, Innovation Agency North West Coast and North East and North Cumbria.

The programme aims to help digital innovator companies increase the spread and adoption of their solutions across the whole of the north of England by delivering a range of supporting activity. Five companies were selected to take part in the first wave of the accelerator and all took part in a series of webinars, hosted by the AHSNs, to explain their products to prospective NHS customers earlier this year.

The participating companies were:

- **Doc Abode** – who have developed software which gives NHS healthcare providers access to a more flexible workforce for arranging patient home visits
- **IEG4** – who have created a digital administration system for health services and local authorities
- **Bruin Biometrics** – who have developed a scanner to measure moisture under the skin to predict the development of pressure ulcers
- **Zilico** – who have developed ZedScan to differentiate between normal, pre-cancerous and cancerous tissue on the cervix according to its electrical properties
- **Cievert** – who are using technology to manage complex referrals within and between Trusts; to transform the management of oncology treatments; expedite reporting; and automatically assess patients



Fast tracking proven innovations

We are delighted to continue supporting the prestigious NHS Innovation Accelerator (NIA). The NIA is an NHS England initiative delivered in partnership with all 15 AHSNs across England and hosted by UCL Partners AHSN. The programme encourages a faster uptake of high impact, evidence-based innovations that help patients, populations, and NHS staff. Independent evaluation shows that NIA innovations save the health and social care system £38m a year.

We have worked with a range of NIA 'Fellows' – the innovators who range from an engineer to a nurse consultant, a former police officer, a respiratory consultant, a dentist, and even a sleep evangelist – and their companies to help get their ideas and inventions adopted by healthcare organisations in our region.

Examples of our work with the Fellows this year include:

DrDoctor

Supporting a live trial and deployment in Doncaster of DrDoctor, which transforms the way hospitals communicate with patients, so they can work in radically different ways. Doncaster and Bassetlaw Teaching Hospitals Foundation Trust implemented DrDoctor to reduce their 'Did Not Attend' rate, improve clinic utilisation, save money and improve patient experience. The results so far are:

- 'Did Not Attend' rate cut by 17%
- £215,000 saved in four months (calculated on an average cost per appointment of £108)
- Projected savings across first 12 months of £690,000
- Return on investment of £4.05 for every £1 spent

IEG4

We supported IEG4, which has created a digital administration system for health and local authorities, in its successful application to join the Innovation Accelerator's 2019 programme. We also helped the company develop a business case for implementation with a large Clinical Commissioning Group in our region, and to develop a full options appraisal and cost/benefit analysis.



Evaluating the smartphone app that detects kidney disease

Another of the NHS Innovation Accelerator companies that we've supported in our region this year is Healthy.io. We have supported the evaluation and regional adoption of their Dip.io product, a smartphone based urine analysis device which enables home urine testing with no quality compromise.



 Healthy.io

This is the first time a smartphone has been used as a clinically-validated digital urinalysis tool which can aid the analysis of a number of health conditions, and it has already been shown to increase the numbers of patients who keep up with their annual diabetes tests by 11%.

Dip.io was implemented in our region by the Modality Group of practices across Hull for the detection of albuminuria (a sign of kidney disease) in people with diabetes. Complications with diabetes are some of the most common causes of chronic kidney disease (CKD): detecting albumin in urine early helps prevent CKD complications and slows the progression of the disease.

We commissioned York Health Economics Consortium (YHEC) to develop an economic evaluation cost-effectiveness model comparing Healthy.io's albumin-to-creatinine ratio self-screening test against standard care for the detection of albuminuria in people with diabetes or hypertension.

Using Dip.io means that rather than a patient having to attend a GP appointment to take a urine test, they are sent a kit through the post to do this at home themselves, using their smartphone and the Dip.io app to send over a colour calibrated image of their dipstick for analysis. Enabling patients to complete a test remotely saves GP clinical time and has increased the numbers undertaking the test.

Not only that, Dip.io has the potential to improve health, save lives, reduce the burden on primary care, and produce a significant reduction in NHS costs.

Healthy.io is the first company to turn the smartphone into a regulatory-approved clinical device, and we are helping them to raise awareness of this innovation across the region and the UK.

Key findings from the YHEC evaluation included:

- 72% compliance rate among those patients who were sent a test (i.e. the test was completed and returned). This equates to 22.7% of the practice's population with diabetes or hypertension.
- YHEC's evaluation estimates cost savings of £472 per patient over five years.
- Scaling up to a UK population, this could result in over £2m of savings over five years for the NHS.



Digital accelerator guides innovators through the NHS supply system

A central element of our role as an AHSN is to stimulate digital innovation in health and care across the region. We see the value, and fundamental necessity, of this crucial business sector being realised and adopted nationally and internationally as we move into a whole new era of digital innovation in a post COVID-19 world.

This highlights the value of the Propel@YH programme which guides innovators through the NHS supply system and we have been delighted to see an increase in applications for the second cohort as our highly valued partnerships continue.

Direct impacts of the programme in year one include:

- £225k funding obtained by companies
- Seven new research collaborations created
- Creation of four new jobs in cohort companies
- Companies' market profile raised by presentations to NHSX and Lord Mayor of London
- Major presence at launch of NHS Health Systems Support Framework – a new way of providing digital solutions for primary healthcare



The first round of Propel@YH attracted global organisations – which had to be willing to establish bases in the region – from as far afield as Toronto, Madrid, and London – along with those from Yorkshire, and was previewed at the Leeds Digital Festival last year and launched at our Transforming Lives Through Innovation Conference in May 2019.

We invested to ensure the success of the programme, employing a fulltime manager, providing promotional campaigns, and a dedicated website. We also organised a wide range of events to spread knowledge of the programme in collaboration with our partners at mHabitat, a trading arm of Leeds and York Partnership NHS Foundation Trust. Five other supporting local businesses also directly benefitted from our investment.

Propel@YH

Successful Propel@YH companies gain unique and invaluable expertise, which would otherwise take many years to acquire, on the process of winning approval in the tightly regulated NHS marketplace.

They receive six months of structured help and guidance to navigate the NHS, which includes:

- Human-related design
- Clinical safety by design
- Understanding procurement in the NHS
- Pitch development
- Access to expert partner organisations including NHS providers and commissioners, primary and secondary care organisations, academic institutions and industry representatives
- Developing a patient-centred, co-designed approach to a digital solution with input from patients
- Signposting and introductions to organisations who may provide financial support
- Other business essentials, such as marketing, legal, and finance expertise

The six innovations chosen for the first programme were:

Digibete: developed with the Leeds Children's Hospital Diabetes Team to improve children and young people's self-management of diabetes, and ease the growing burden on healthcare professionals. It provides a range of clinically approved videos and information on areas such as diet and exercise.

www.digibete.org

Healthcare Engineering: 90% of waiting time in A&E is wasted, so the company created the 'SmartER' software by which a patient goes to a kiosk to fill in details of their injury or illness while they wait. This cuts clinician data entry and means less waiting in the department for the patient: feedback has been very positive. Currently SmartER is being used in the Doncaster and Bassetlaw NHS trust and an evaluation, funded by us, shows significant potential savings are being made.

www.emergence-er.com

Heterogenius: this is a Leeds University spin-out company with a portfolio of products for multi-user medical image viewing and management. These can be applied to develop image analysis of digital histopathology (tissue examination) where there is currently a staffing crisis, allowing remote working and automation.

www.heterogenius.co.uk

Medicsen: the company has developed Smartpatch, a unique needle-free drug patch which delivers the right amount of insulin using customised predictive and preventive AI technology input into a smartphone. It is described as 'the world's first non-invasive artificial pancreas'.

www.medicsen.com/en

Medicspot: the company's network of walk-in Medicspot stations across the UK are optimising primary care with diagnostic devices connected by a video terminal capable of triage, diagnostics collection and remote consultation.

www.medicspot.co.uk

Scaled Insights: the company has created a behavioural AI system to analyse more than 130 variables in people's speech patterns and communicate with them most effectively. The system can be used by organisations to gain insight into new or existing patients or customers.

www.scaledinsights.com

Governance

Yorkshire & Humber AHSN is a company limited by guarantee. Our key executive groups are:

Board of Directors

Professor William Pope (Chair), Richard Stubbs (Chief Executive Officer), Sir Andrew Cash OBE (Non-Executive Director) and Christine Outram MBE (Non-Executive Director) meet quarterly to conduct the company's business.

Their remit includes scrutiny and assurance of:

- Financial, performance and risk management.
- Development of, and delivery against our strategy and business plan.
- Equality impact and action.



Professor William Pope, Chair

Professor Pope has a wealth of experience, leadership and expertise gained from senior roles within industry, the NHS and academia, including at chairman and chief executive level. He is currently Chair of the AHSN Network Chairs Group.

He has significant experience of working with world-leading companies including BAE Systems, BBC, BP, Ford, GlaxoSmithKline, Huawei and Unilever, and was CEO of the UK's largest integrated health, safety and environmental business for 10 years.

He has been one of the UK's leaders in managing and developing environmental companies over the last 25 years, and is a four-times winner of the 'Technology Fast 50' awards for the fastest growing companies. He has been awarded numerous business, environmental excellence, bioscience and innovative biotechnology awards, and has previously been a Business Innovation Support Person of the Year.

In 2019, Professor Pope was appointed as the independent chair for the Suffolk and North East Essex Integrated Care System. Amongst other appointments, he was previously Chairman of the East of England Regional Development Agency and Northamptonshire and Milton Keynes Primary Care Trusts, and is currently Chairman of the board at the University of Suffolk and director of East Midlands Ambulance Service NHS Trust. He has previously been Chairman of Healthwatch Northamptonshire and Healthwatch Rutland, and Chairman of East Midlands Pathology.



Richard Stubbs, **Chief Executive Officer**

Richard's focus is on driving the faster adoption of innovation into the NHS. He represents Yorkshire & Humber AHSN on several boards in the regional health and care system including the South Yorkshire and Bassetlaw Integrated Care System board, the West Yorkshire and Harrogate Health and Care Partnership board and the Yorkshire and Humber Digital Care Board.

Richard leads on several programme areas for the AHSN Network including Communications and Engagement, Diversity and International activity. He also chairs the Northern AHSN Group which includes the leadership teams from all four northern AHSNs.

He is a founding member of the NHS Confederation's Black Asian Minority Ethnic (BAME) Leadership Network as well as being a member of NHS Confederation's independent task force to support NHS organisations increase the diversity of their boards and governing bodies. Richard is an established member of the NHS Assembly and is a Non-Executive Director of the Sheffield City Region Local Enterprise Partnership, a Visiting Fellow at Sheffield Hallam University and chairs the strategic advisory board of its Advanced Wellbeing Research Centre (AWRC).



Sir Andrew Cash OBE, **Chief Executive System Lead,** **South Yorkshire and Bassetlaw** **Integrated Care System** **and Non Executive Director,** **Yorkshire & Humber AHSN**

Andrew is Chief Executive System Lead of the South Yorkshire and Bassetlaw Integrated Care System, one of the first and most advanced integrated care systems in England.

Andrew was formerly the Chief Executive of Sheffield Teaching Hospitals NHS Foundation Trust, a post he held for 16 years. He is a visiting Professor in Leadership and Development at the Universities of Sheffield and York. He chairs the NHS Employers Policy Board and is Deputy Chair of the NHS Confederation.

He was appointed an OBE in 2001 and knighted in 2009 for services to the NHS.



Christine Outram, Chair at The Christie NHS Foundation Trust and Non-Executive Director, Yorkshire & Humber AHSN

Christine was appointed as Chair of The Christie in October 2014.

Christine has had a long career in the NHS with over 20 years' experience at Chief Executive level, including the North Central London Strategic Health Authority and NHS Leeds, as well as a spell as Director General for the Department of Health's Arm's Length Body Review in 2004.

With a strong interest in professional education and research, she was appointed managing director of NHS Medical Education England in 2009, an organisation set up to support the Department of Health's work to develop education and training for doctors, dentists, pharmacists and healthcare scientists. She later combined this role with that of transition director leading on the set up of Health Education England in 2011.

Strategic Advisory Board (SAB)

Chaired by Professor William Pope, the SAB is made up of senior leaders from across Yorkshire and the Humber bringing together researchers, clinicians, patients, industry and educators with strategic, financial and operational experience. Its remit covers:

- Advice and guidance at a regional level.
- Consulting partner organisations to agree priorities and identify opportunities.
- Forward planning and agreeing our overall portfolio.
- System-wide ownership and leadership.
- Creating dynamic partnerships and mobilising wider resources.
- Advocacy for our work.

Senior Leadership Team (SLT)

The SLT is responsible for the day-to-day leadership and running of our organisation.

It is accountable to our Board of Directors and has robust governance arrangements in place to ensure we operate effectively.

Nationally, we report quarterly to NHS England, NHS Improvement and the Office of Life Sciences (OLS) to assure them we're achieving our national metrics and locally agreed plans.

Our funding is split between NHS England, NHS Improvement and the Office of Life Sciences for the Innovation Exchange. We also receive funding from sources such as Health Education England and Healthcare UK.



**Kathy Scott,
Director of Operations
and Deputy CEO**

Kathy supports the spread of innovation across the region. Prior to this she was Head of Innovation and Research at NHS England. She has a deep interest in supporting innovation uptake in the health and care system, removing the barriers that innovators and health professionals experience.

Before joining the NHS, Kathy was a career civil servant with experience in both national and regional roles in the Department for Work and Pensions, the Government Office for Yorkshire and the Humber and the Department of Health.



Her varied career has included supporting the unemployed into work, measuring the levels of fraud and error in the benefit system, developing welfare and health policy, researching and implementing strategic solutions to complex issues, ensuring health arm's length bodies provide value for money and reviewing management of intellectual property in the health sector.

Kathy holds an MA in Public Service Management from the University of York, an MSc in Health Policy from Imperial College London and is a trained mediator, graduate assessor, mentor and coach.



Tony Jamieson, Director of Transformation and Improvement

As Director of Transformation, Tony leads system-wide adoption, innovation and continuous improvement at the Yorkshire & Humber AHSN. He leads on patient safety, as well as providing oversight of our improvement programmes.

Tony leads on polypharmacy for the national AHSN Network and is co-lead for medicines safety within the National Patient Safety Improvement Programme. Tony's career started in community pharmacy and he brings his clinical experience, commercial background and perspective as a commissioner to the organisation's endeavours.



Dr Neville Young, Director of Enterprise and Innovation

Dr Neville Young joined the Yorkshire & Humber AHSN in June 2016. He has a real interest and track record in supporting the delivery of high-quality research and innovation in the United Kingdom. Neville is the current Chair of the AHSN Commercial Directors forum, leads on international activity from this group, is a National Institute of Health Research (NIHR) reviewer and sits on the Accelerated Access Collaborative 'Rapid Uptake Product' industry liaison group.

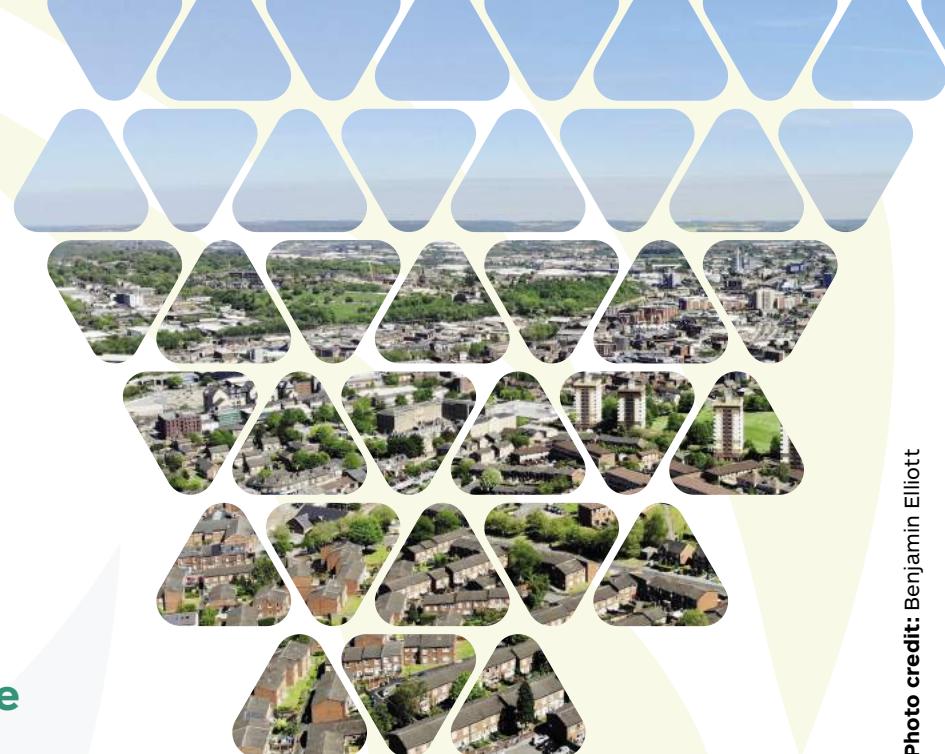


Photo credit: Benjamin Elliott

Dr Young has worked as an academic researcher, a drug trial manager, a consultant, as a director for a health tech start-up and is focused on helping to identify and support the "pull" from the healthcare systems for innovative health technologies.

He completed his doctorate in Molecular Embryology from Kings College London, before working at the Institute of Cancer Research in London and then the Institute of Molecular Bio-Sciences in Queensland, Australia before returning to the UK and working in research development, healthtech innovation and the AHSN Network.



Sally Haworth, Director of Corporate Services

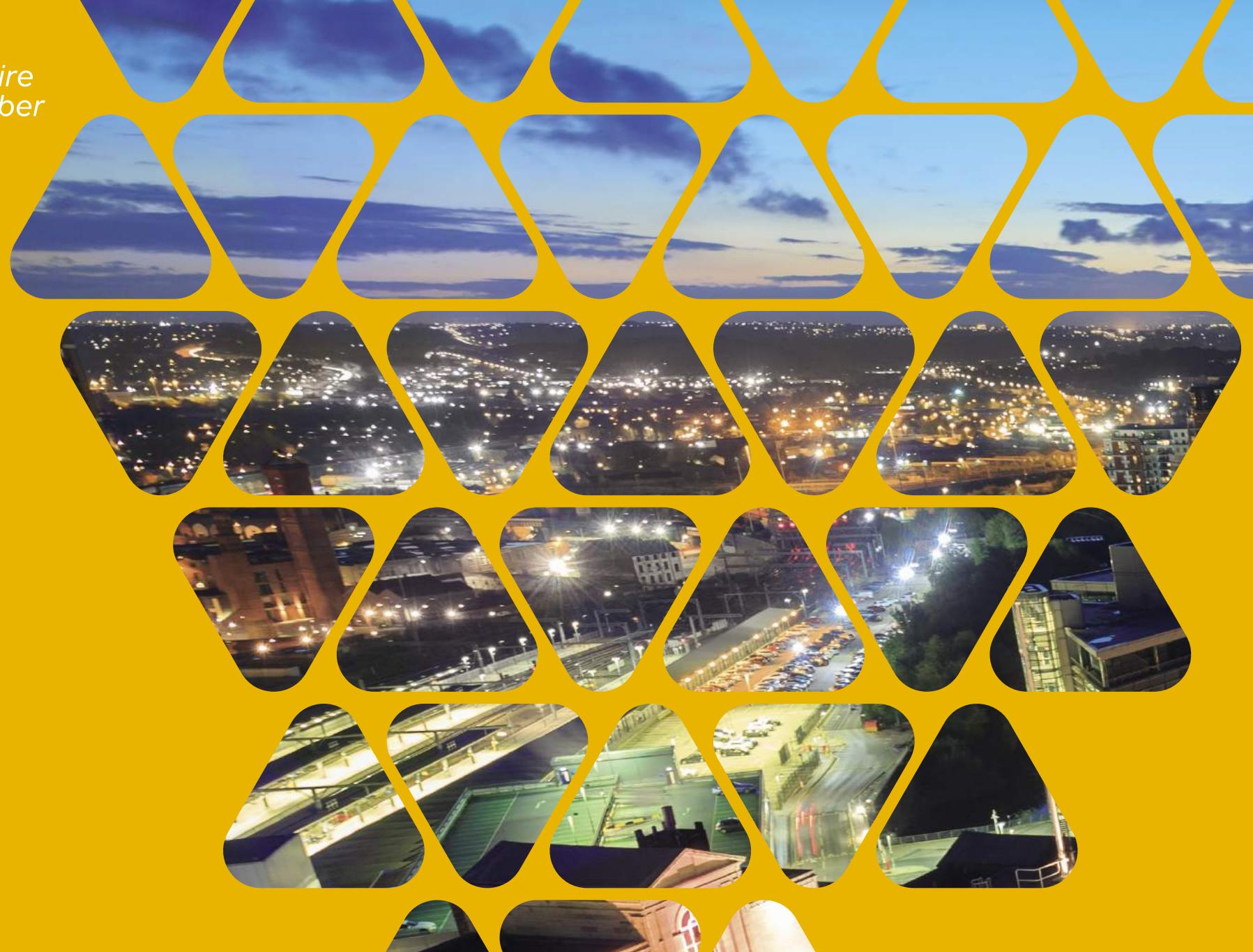
As Director of Corporate Services, Sally is responsible for the strategic and operational management of several key functions including Finance, Human Resources, IT and Marketing. She has been with the organisation for over three years and was previously Head of Corporate Services.

Sally's background is in accountancy and she uses her extensive skills to produce the performance reports required by NHS England as well as advising our Board of Directors on all aspects of finance and governance. This ensures we continue to provide the best value for our members.





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