



Health  
Innovation  
Leeds

# Advancing health and care *for all* <sup>2024</sup>





# Contents



Health Innovation Leeds	4 - 7
Prime location	8 - 11
One ecosystem – world-class players	12 - 13
INbusiness, INvest, INnovate	14 - 15
Research and skills	16 - 17
Commercialisation journey	18 - 19
Transforming health and care	20 - 23



**One vision  
Ignited in partnership  
Forging global**





**connections**

**Scaling ideas and opportunities**

**Advancing health and care for all**

**Your gateway to internationally renowned  
health research and innovation**



Image: iStock.com/deberarr

# Health Innovation Leeds is an internationally- competitive health research and innovation hub.

**It is the UK's third largest and economically fastest growing city.**

It has market-leading strengths in healthtech, digital, data and artificial intelligence.

Leeds is home to

- **an outstanding industry cluster**
- **world-class academic research**
- **a single, integrated health and care partnership**
- **state-of-the-art facilities**
- **superb, supportive infrastructure**
- **regional headquarters of the world's largest single health system, the NHS.**

Its population diversity reflects that of the UK, making it an ideal place for innovation: to start small, trial new ideas, and scale fast.

It is underpinned by a strong and diverse talent pool, a culture of cross-sector collaboration and inclusion, and a shared focus on reducing health inequalities and prioritising those in greatest need.

Convening a cross-sector approach to this is Leeds Academic Health Partnership, one of the largest of its kind in the UK.

These are some of the cornerstones positioning Health Innovation Leeds at the forefront of advancing health and care for all.

Part of a

**£160m**

**West Yorkshire Healthtech and  
Digital Tech Investment Zone**





“

Leeds is on course to be one of the UK's most stable, forward-thinking and attractive locations for health and care research and innovation.\*

”



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# World-class, £1.5bn city centre science park

**Leeds' dynamic new Innovation Arc stitches together some of the most significant assets in the North of England, creating a world-class hub for research, innovation and technology in health and life sciences.**

As part of this, in a major step forward for the UK's health and life sciences research and development, the city's teaching hospital site has released a one million square feet, innovation-led, mixed use development opportunity in the heart of the city, forming an Innovation Village.

Adjacent to the university campuses and home to major public sector organisations and private sector companies, this prime location provides access to world-class health innovation talent and expertise.

It will include the development of a new state-of-the-art hospital, including a new children's hospital, a new adults' hospital and a single-site maternity centre.

set to create

**4,000**  
new jobs in **health  
and life sciences**

bringing almost

**£13bn**  
to the **regional  
economy**







**The Innovation Arc represents one of the largest regeneration schemes in the north of the country and will maintain our strong momentum and growth across the city. It will reinforce our position as a nationally important and internationally recognised economic and knowledge engine, where cutting edge academic research and entrepreneurial businesses come together.**

**Dame Linda Pollard, Chair of Leeds Teaching Hospitals NHS Trust and and Chair of the Leeds Innovation Partnership.**



# Primelec

## The North: → West Yorkshire:

Home to 15 million people, the Northern Powerhouse is an established, globally competitive and thriving economic area, including the West Yorkshire region.



One of the **strongest regional economies** outside London.



**£60bn**  
GVA



**£160m**  
**Healthtech and Digital Tech Investment Zone**



**Businesses:**  
**600** health and life sciences,  
**250** medtech,  
**65** digital health



Investment in healthtech businesses **increased 15-fold (2018 – 2023)**



Sector employs: **more than 190,000 people**



Diverse, strong talent pipeline spanning **digital analysts, apprenticeships** and **17,000 science, tech, engineering and maths graduates**



Over **170** languages spoken



Frequently voted as **one of the best places to live**



# ocation

## → Leeds:

**At the heart of West Yorkshire, Leeds is culturally diverse, richly creative and perfectly located.**

It offers easy access to the famously stunning countryside that is Yorkshire, the largest county in the UK **spanning 2.9 million acres.**

# Leeds

**With superb transport links nationally and internationally, Leeds is a first-choice destination for businesses – from individual entrepreneurs to large corporates. It's also ranked 'best place to live in the North of England'<sup>1</sup>**



**Strong, collaborative leadership**



**Culture of cross-sector co-location**



**Cutting-edge healthtech manufacturing for over 100 years**



**A shared vision to transform health and care for all**



**Unparalleled innovation infrastructure and support**

## **Healthcare**

Home to the **world's largest, single health system**, the NHS

**One city partnership** across health and care

Employs **60,000** people

## **Digital and data**

A **world-leader** in AI

Hosts one of the **world's first digital pathology cooperatives**

**Frontrunner** in data-led healthcare transformation

**3,000 digital and data companies**

## **Industry**

**Top UK city** for business start-ups

**Top UK city** for high-growth companies

**Ranks 3rd internationally** as healthtech hub

## **Research and talent**

**Three** major universities

National magnet for **health and care research and innovation funding**

**World-leading research**

**75,000** students

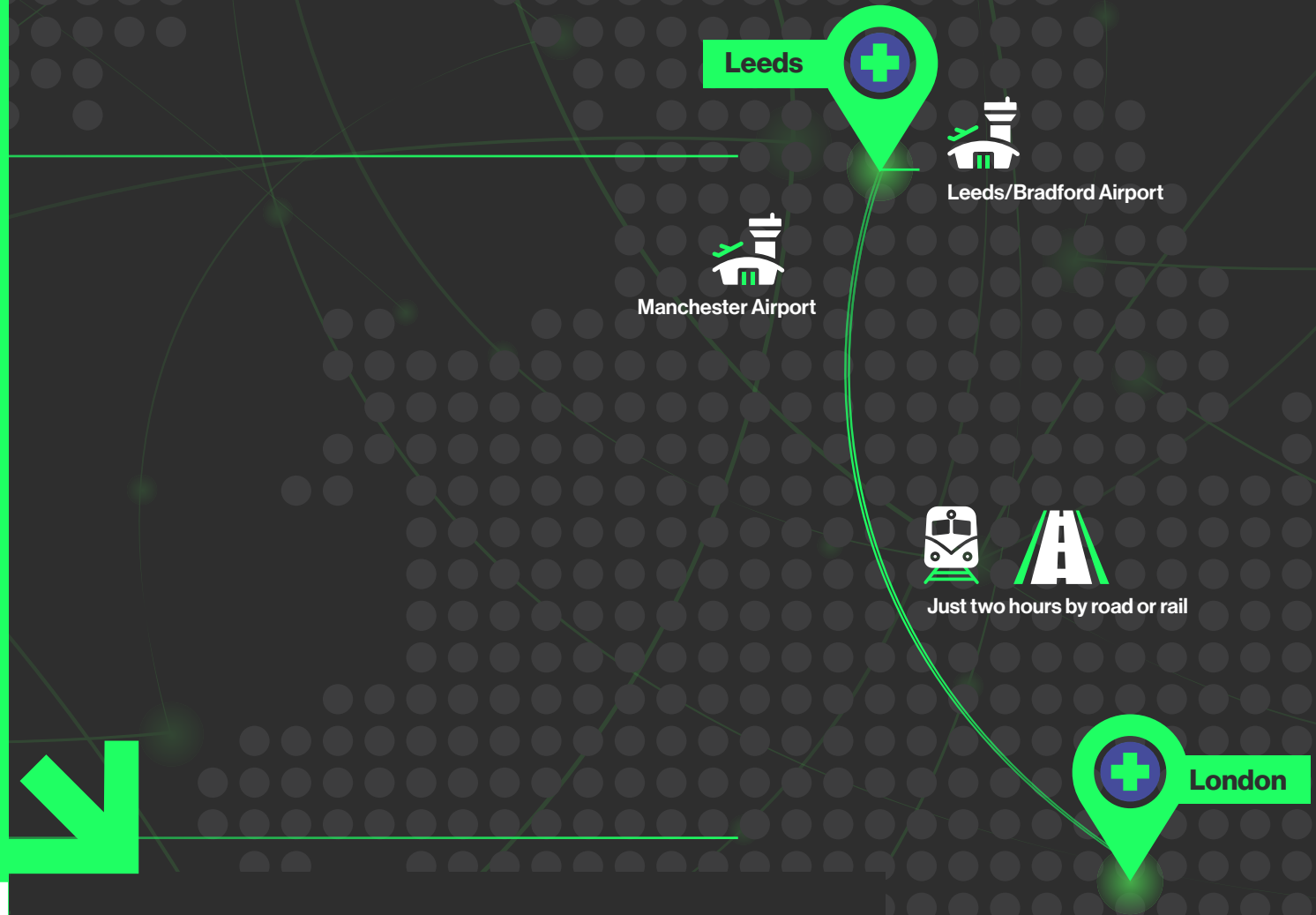
<sup>1</sup>Sunday Times, 2024



Leeds is a big city region, but it still has a strong community and a good healthtech scene – so you have the benefit of both scale and community. North-South connectivity is also good; it only takes a couple of hours to get to London from Leeds [and] the local universities are great [they've been] very pro-active when it comes to AI and data science internships.\*

Whether you're an **innovator, business, investor** or taking your **next career step**, Leeds' internationally-renowned ecosystem can help you succeed - **find out how:**

[healthinnovationleeds.com/ecosystem/](https://healthinnovationleeds.com/ecosystem/)







# One ecosystem

## - world-leading players

Leeds' research and innovation in health and care ecosystem is one of the most comprehensive and interconnected in the UK. So, however you want to get involved, there is no wrong 'front door' and you'll find a dynamic culture of collaboration.

## Transforming health and care



## Prime location

## Regional partners





## Research excellence



## For business



## Digital and data powerhouse



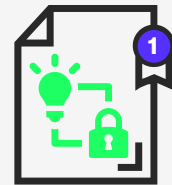
## National HQs





# IN business

## - INvest - INnovate



Top city for healthcare patents:  
183 applied for or granted

(2018 - 2022)



Ranks 3rd internationally as a healthtech hub

144 companies

£1.6bn turnover



employing 11,400 people



With 9 of the 10 companies with the highest employment growth



Home to the region's top investment raising companies



## IN business

Leeds' health innovation industry sector and supporting infrastructure are market-leading. Here, the healthtech sector is thriving, helping position the city at the forefront of healthcare innovation.

The city welcomes businesses looking to locate in Leeds, whether individual entrepreneurs or large corporates, offering them wide-ranging support.

With a strong focus on economic growth that benefits all, Leeds aims to create a diverse entrepreneurial community that will help fulfil its inclusive growth ambition.



Visit [invest-leeds.co.uk](https://invest-leeds.co.uk)





We got to meet high-level people that would have taken us a couple of years to acquire for ourselves. There's an ecosystem welcoming new tech in the healthcare sector that is different to other places in the world – Leeds seems like an open city welcoming new technology, and we want to be a part of that.”

International Industry Stakeholder \*

## INnovate

**Leeds works with businesses and entrepreneurs to support research and development which helps address some of the hardest health challenges – for the city and beyond.**

It is a top UK academic hub for creating spin-out companies, offering innovative businesses bespoke knowledge, expertise and talent via its three major universities.

**Nexus**, based at the University of Leeds, is a global community of innovators, entrepreneurs and high growth businesses. Nexus helps them access funding, develop and test their prototypes and bring high-value innovations into the NHS.

Innovative businesses can also access academic knowledge, expertise and talent via **Leeds Beckett University's Knowledge Exchange** and **Leeds Trinity University's Knowledge Transfer Partnership**.

And directly within clinical settings, industry innovators can work closely with NHS staff via Leeds Teaching Hospital NHS Trust's **Innovation Pop Up** – an opportunity unmatched in the North.

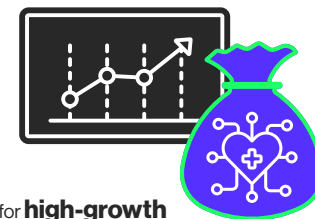
Acting as a bridge between health care providers, commissioners, academia and industry in Leeds and across the region is **Health Innovation Yorkshire & Humber**. It works with innovators, helping build a pipeline of solutions for the NHS from research and product development through to implementation and commercialisation.

Its digital health accelerator programme, **Propel@YH**, is open to UK and international innovators. Now in its fifth year, the Leeds-based accelerator has provided a structured programme of support to turbo-charge company growth for 51 companies in the UK and 52 innovators from around world with an interest in bringing their products to the UK healthcare market.

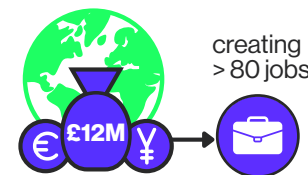
## INvest

Investment opportunities in Leeds are among the strongest in the region and are growing. These include, for example, Northern Gritstone, supporting science and technology-enabled businesses, and NorthInvest, focusing on diverse tech and digital start-ups.

Investment in digital start-ups and scale-ups alone increased by 88 per cent in 2022<sup>1</sup>.



Top city for **high-growth healthtech** companies securing equity investment



Secured = **£12m in Foreign Direct Investment (FDI)** for health and care related projects

**Ranked 2nd internationally** for **private investment** in innovative wellness companies



<sup>1</sup> Dealroom, for the UK Digital Economy



# Research and Skills

## Outstanding research infrastructure



Top UK city for  
**health and  
care research  
funding**  
(£200m)



1/3 **case studies** from city's  
universities are health-related

**Leeds' three major universities, including the University of Leeds** – part of the research-intensive Russell Group, are renowned for their world-class research in health and wellbeing impacting local communities. Their multidisciplinary research covers complementary areas, helping to address some of today's most pressing challenges.



LEEDS  
BECKETT  
UNIVERSITY



The Leeds Centre for Healthtech Innovation involves around **150 scientists** and **clinical academics** working to accelerate the development and adoption of new healthtech.



Further demonstrating Leeds' research strengths, the city's **National Institute for Health and Care Research (NIHR)** specialist clinical research facilities are international centres of excellence. They enable and deliver world-leading health and social care research to improve people's lives.

**This outstanding, £40 million NIHR infrastructure in Leeds includes the following, and more.**

- **Leeds Biomedical Research Centre**, focusing on musculoskeletal disease, cardiometabolic disease, surgical technologies, haematology, pathology and antimicrobial resistance and infection.
- **Leeds Clinical Research Facility**, undertaking more than 100 high-quality, early-stage clinical trials at any one time, accelerating the development of new treatments and tests.
- **Leeds HealthTech Research Centre**, a national hub for surgical innovation to develop new healthtech that improve surgical care in the NHS.

### Leeds also hosts the NIHR:

- **National Research Delivery Network Coordinating Centre**, helping address health and economic inequalities across Leeds, the region and nationally.
- **Yorkshire and Humber Regional Research Delivery Network**, transforming research to meet local communities' needs.

Leeds health and care system, including Leeds' three NHS Trusts providing community, mental, acute and specialised care, is research active and working in partnership.

Leeds Teaching Hospitals NHS Trust – one of the biggest in the UK - has research strengths in musculoskeletal disease cardiovascular disease, cancer, medical/surgical technology, infectious disease and antimicrobial resistance, real world data, artificial intelligence and service digitisation.

An established Centre of Excellence, the Trust works in partnership across the region with leading industry and academic partners to deliver internationally acclaimed research and innovation.

Internationally-leading research at the **world's first** Academic Unit of Palliative Care.





## Strong skills pipeline



Top demand for R&I skills:  
up 50% in five years



In a pioneering approach and a first in the UK, the Leeds Health and Care Academy provides unique, citywide, online learning and development for the 60,000 people working in Leeds' health and care. It works with partners to engage with local people from the city's diverse communities and support them into local health and care careers.

This is underpinned by the city's strong pipeline of talent and skills from its three main universities, each providing a wide-range of complementary courses.

Leeds City College is one of the largest further education colleges in the country. Its School of Health Science and Social Care offers a pipeline of opportunity for students and of talent for local health and care employers.

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# Commercialising health innovation in Leeds: innovator support from discovery to deployment

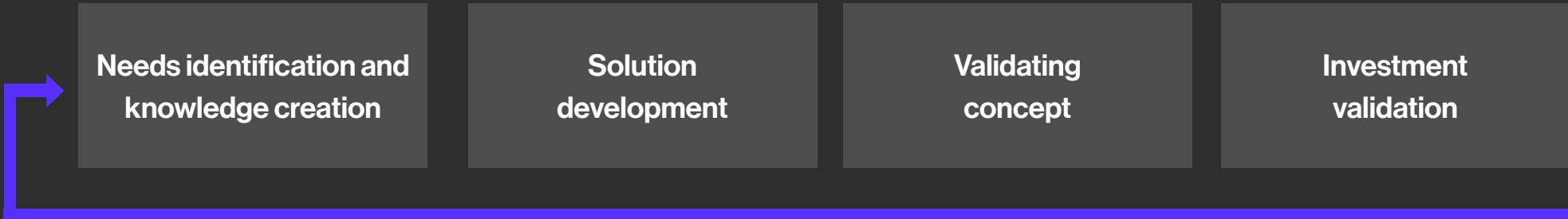
The table below outlines the comprehensive and wide-ranging support for innovators in Leeds. Helping innovators and visitors navigate all of this is Leeds Academic Health Partnership, one of the biggest of its kind in the UK.



Visit: [healthinnovationleeds.com](https://healthinnovationleeds.com)



## Collaborative development across technology readiness levels (TRLs)



### Support needs

#### Health and medtech research expertise

Our health and care system uses the Leeds Data Model to understand and clearly define the healthcare priorities for Leeds people.

University research arising from leading academic strengths translates into new clinical products and services<sup>1</sup>. With connection for business such as the Medtech Impact Accelerator.

Strong talent pipeline up to and including doctoral training in AI for health<sup>2</sup>.

#### Clinical expertise, lab space, access to equipment

Significant NIHR infrastructure supports clinical research, and translation into healthcare transformation.

Cross-sector co-location, such as via the Teaching Hospital's Innovation Pop Up, connects healthtech industry innovators with the NHS.

University of Leeds hosts Nexus, a global community of innovators collaborating within a state-of-the-art hub.

#### Access to patients/users

The Leeds Institute of Clinical Trials Research is an international leader in its field. It conducts national and international randomised and early phase clinical trials to change clinical practice for the better.

Leeds Beckett University's Obesity Institute exemplifies Leeds multidisciplinary teams with strong community links for co-produced research.

#### Professional advice (regulatory, legal, financial)

Leeds offers a close-knit, accessible network of professional advisors experienced in health and care research and innovation.

From micro businesses with deep expertise such as Charlton Regulatory (specialist regulatory medical software advisory firm) to corporate advisors KPMG (strategic partners of the Nexus innovation hub) and Squire Patton Boggs and Brabners (specialist legal advisory).

#### Work space

A wide range of options all fostering ecosystem collaboration.

Nexus offers office space, wet and dry labs, and state-of-the-art equipment.

Bruntwood SciTech's 'Platform' - home to 80 of the region's most innovative and disruptive digital and tech start-ups and scale-ups.

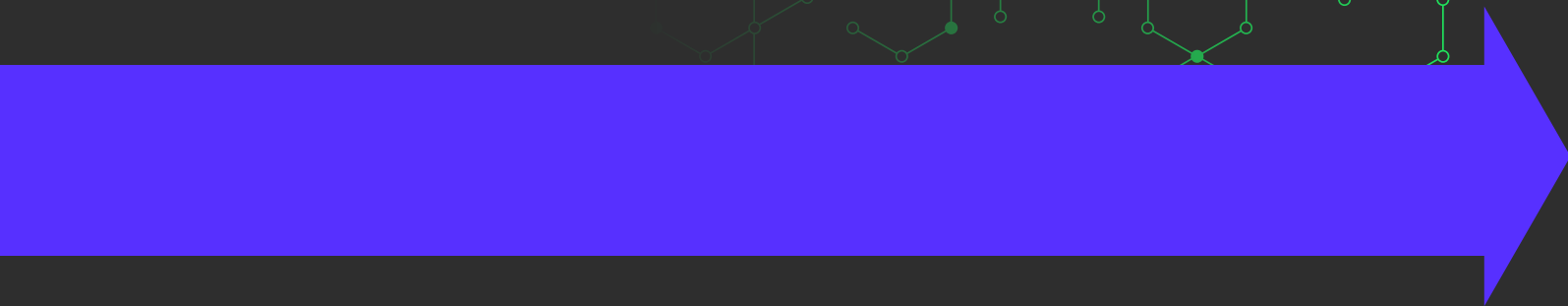
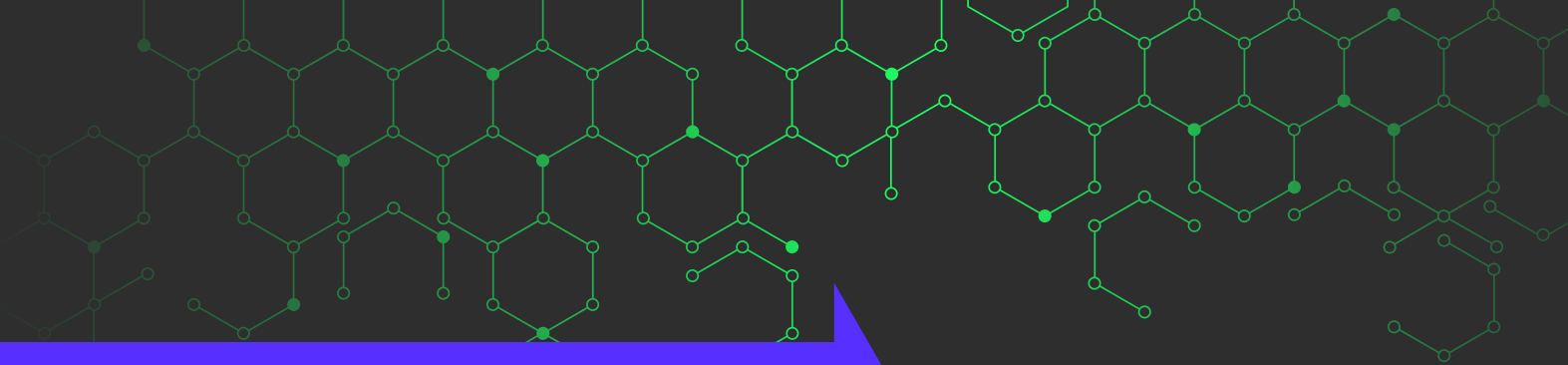
The NHS-sited Innovation Pop Up, and forthcoming Innovation Village, providing space for start-ups and world-leading medtech companies.

<sup>1</sup>For example, via the EPRRC-funded Yorkshire MedTech Place Based Impact Acceleration Account (PBIAA).

<sup>2</sup>UKRI Centre for Doctoral Training in Artificial Intelligence for Medical Diagnosis and Care

<sup>3</sup>Run by the Department for Business and Trade





## Clearance and trials

## Launch and evaluation

## Post-launch development

### Investor networks (seed)

A very strong investor presence including Northern Gritstone and North Invest.

Access to top investors in health and medtech including Apache Capital Partners, BGF Growth Capital and IP Group.

### Access to health systems

Leeds hosts six of West Yorkshire's nine major NIHR initiatives including the new HealthTech Research Centre. They deliver health and medical research and evaluation and provide access to clinical research and innovation expertise.

Health Innovation Yorkshire & Humber offers end-to-end innovator support, and regional, UK-wide and international connections.

### Domestic market access, investor networks (venture)

Leeds offers access to public funding and private investment for innovative healthtech businesses, to bridge between product development and commercial returns.

Locally focused investors such as Northern Gritstone and NorthInvest have strong relationships with Leeds' universities.

### Health and medical research and evaluation expertise

See notes under 'Access to health systems'.

Leeds has a system-wide approach to evaluation in health and care, with connections to academia.

The Clinical Trials Research Unit at the University of Leeds is a UK-leading centre which shapes clinical transformations worldwide.

Leeds embeds research expertise across different settings and communities to support a co-produced approach.

### International market access, export

The Government's Internationalisation Fund<sup>3</sup> helps businesses to grow overseas.

West Yorkshire Combined Authority, Health Innovation Yorkshire & Humber and trade bodies such as the Association of British Healthtech Industries (ABHI) all offer support to companies looking to expand into international markets.

Source: Pursuing Excellence – an independent analysis of Leeds' health and care research and innovation (2024)



# Transforming health and care

**Leeds is synonymous with world-leading transformation in health and care.**

**Breakthroughs in specialised care include, for example, using artificial intelligence for breast screening, using non-invasive ultrasound technology to treat liver cancer and pioneering the UK's first surgical hand transplants. These are among the many healthcare innovations marking the city's international renown.**

Alongside these clinical innovations, partners are forging new approaches to ensure research and innovation reaches into local communities and serves those most in need.

Working with University College London's Institute of Health Equity, Leeds City Council is complementing and building upon the work already being done in the city to improve health, particularly for those living in areas of higher deprivation.

And working directly with the vulnerable and disadvantaged is Leeds Beckett University's Centre for Health Promotion Research, one of the UK's leading academic institutions in this field.

What follows is just a snapshot of how the city's strengths in research, industry innovation, digital and data are helping transform care for some of today's hardest health challenges, such as cancer, diabetes and multiple long-term conditions.

*Image: iStock.com/Fat Camera*



## Through research excellence

### Engineers and data scientists partner with healthcare

In a novel approach, researchers in Leeds are combining systems design and engineering expertise with data science to explore with the city's healthcare system how it could transform care for people with multiple long-term health conditions. Such conditions affect more than a quarter of people in the UK and this is set to increase.

Using the city's data insights, partners are focusing on those with the poorest health outcomes living in the most deprived areas, prioritising effective engagement with them to garner new, rich insights. They are developing a proposal for full-scale research to inform the potential redesign of complex health and care systems, based on and to better meet people's overall needs, in Leeds and beyond.

### Children's health outcomes research at Leeds (CHORAL)

Leeds is set to lead the UK in transforming health and wellbeing for children and young people.

The city's world-leading scientists have joined forces with politicians, public sector organisations and advocacy groups to tackle the serious health and wellbeing problems affecting millions of children and young people across Leeds, Yorkshire and the UK.

As well as considering factors that influence children's overall wellbeing, this £5 million research partnership<sup>3</sup>, focuses on cancer, mental health and life-threatening illnesses in childhood. CHORAL is developing evidence-driven policies to transform public services for children across the UK.

### Leeds digital and data strengths are market-leading, especially within health and life sciences.

With the city's health and care services united via a single, integrated health and care data model, partners are developing an exemplary approach to using real world data insights to inform research and care planning.

The city's Office of Data Analytics is strengthening data insights for health research, bringing together a wide range of health service (NHS) commissioning data and a range of local dataflows, including from general practice, adult social care and public health.

With plans to link these data sets with those in children's services and wider local authority data, such as transport, air quality and housing, the Leeds Data Model is considered a national exemplar. These insights dovetail with the Leeds Social Progress Index, providing a clear and unbiased measure of overall wellbeing in the city.

<sup>3</sup>Funded by Leeds Hospitals Charity, University of Leeds and Leeds Teaching Hospitals NHS Foundation Trust.

# Transforming health and care

As an internationally-competitive health innovation hub, Leeds growing portfolio of 'made in Leeds' industry innovations is helping solve some of today's hardest health challenges.

**Leeds is a top UK academic hub** for spin-out-company creation.

**Leeds Teaching Hospitals NHS Trust hosts the £50 million National Pathology Imaging Cooperative (NPIC)**, providing globally-leading cancer diagnostics using artificial intelligence to transform care.

*Image: iStock.com/Maksim Tkachenko*



## Through industry innovation

### Transforming care in cancer diagnostics

Leeds-based PinPoint Data Science has developed a machine learning-based blood test to provide clinicians with a calibrated probability as to whether a person has cancer. Working in partnership with the University of Leeds and the Leeds health system, the PinPoint Test aims to bring about a fundamental change in the approach to diagnosis. This is set to create a future without bottlenecks and waiting lists, where people get the care they need faster and more efficiently.

### Transforming care for children with diabetes

Developed in partnership with Leeds Teaching Hospitals NHS Trust, Digibete is a video platform, app and one-stop-shop helping children, young people and their families manage diabetes by extending the reach of clinical teams online. 'Made in Leeds', Digibete is now used in more than 150 countries and in 90 per cent of paediatric type 1 diabetes clinics in the UK.

### Emerging spin-out company transforms diabetes care

Offering a novel, non-invasive approach to real-time glucose monitoring, NIQS Tech is an exciting, new quantum technology spin-out from the University of Leeds. The company is developing a truly non-invasive, continuous and accurate glucose sensor to support better and more proactive diabetes management practices.

**“NIQS’ core technology has far-reaching applications and we are aiming to extend our sensing portfolio to other biomarkers and analytes, such as lactate. This could see applications for the sports and performance industry when combined alongside glucose measurements, or substances such as alcohol and drugs, which we see as other really exciting propositions.”**

### Established spin-out redefines global digital dentistry market

Established University of Leeds spin-out company Mimetrik Ltd uses 3D scanning technology to produce digitised images of dental patients’ teeth and facial structure. Its world-leading expertise has already led to the development of a five-axis scanner and software that, in clinical trials, has produced scans at a far higher level of accuracy than any existing product on the market.

The company aims to redefine the global digital dentistry market, creating a full ‘digital pathway’ between dental labs and clinicians for the benefit of patients, replacing the costly, time-intensive current approach, enabling more accurate and faster treatment.

### New expertise for health and life sciences – choosing Leeds

With one of the most diversely equipped labs in the world including technology exclusive to the North of England, the Northern Cell Metrology Hub, recently located in Leeds, brings a new level of expertise to the health and life sciences sector.

The Hub supports industries to achieve safer, more reliable, and economic solutions through its expertise in measurement technologies relating to cells. It provides traceable and increasingly accurate cell measurements, which are of growing importance to the high tech and high value health sector.

**There is a massive influx of health innovation companies choosing to be based in Leeds and it was important that we lived alongside them, where academia and industry co-exist and collaborate. Leeds and Nexus provide a unique opportunity in this sense with so many possibilities for partnerships, whether that’s with the start-ups based within Nexus, Leeds Teaching Hospitals NHS Trust, or the universities.**

**Northern Cell Metrology Hub**



**Health  
Innovation  
Leeds**

Supported by  
Leeds Academic  
Health Partnership

# Ready to join in?



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