

Healthtech Yorkshire

Cite as: Nelles, Jen, Kevin Walsh, Michalis Papazoglou, Elvis Nyanzu, Syahirah Abdul Rahman, and Tim Vorley. 2023. *Healthtech Yorkshire - Understanding Cluster Growth Potential Case Study*. Oxford, UK: Innovation Caucus.

Case Study Overview

Characteristics and history: The region is primarily divided into two clusters: West and South Yorkshire, with West Yorkshire known for its Medtech sector, and South Yorkshire known for health and wellbeing. Several interviewees repeatedly echoed the sentiment that "the region is most definitely two clusters rather than one cluster." However, there are pockets of distinct activity throughout the region, localised near universities.

West Yorkshire is home to four key subsectors: digital healthcare, personalised medicine, tissue regeneration and wound care, and wellbeing (nutrition, wellness, mental health, sleep). To some extent activity seems to localise around university strengths and local industrial underpinnings. For example, Huddersfield traditionally has a strong textile manufacturing background and its university has strengths in industrial textiles, which underpins the Healthtech sector for areas such as tissue regeneration and wound care. Bradford has a digital health enterprise zone, and there is a distinct grouping of digital health and Medtech between Kirklees and Bradford, particularly on the edge of Leeds. Bradford has a focus on data analytics. The growing digital sector in Leeds, with firms developing mobile apps for managing health conditions, links to physical medical devices and dovetails with clinical systems. The telecommunications infrastructure in Leeds has led to fintech and IT specialisation in Leeds, which in turn support the digital health sector in the area.

South Yorkshire is better known for Health and Wellbeing, with an emphasis on wellbeing. The Health and Wellbeing sector, which contributes 12% of South Yorkshire's GVA and employs one in six people (South Yorkshire MCA, 2021) is at an earlier stage of the cluster development journey compared to West Yorkshire, but its strength in manufacturing has translated into some Medtech manufacturing as well. Interviewees highlighted that the health and wellbeing sector in South Yorkshire is bigger than the manufacturing sector - it's the second largest sector in the region with about 1,815 businesses in this space (South Yorkshire MCA, 2021). In South Yorkshire the strength and relatedness of manufacturing and Healthtech, particularly medical technologies for health and wellbeing which involves manufacturing of physical devices and implants using advanced materials, is epitomised by the institutionalised regional support from the Advanced Manufacturing Research Centre (AMRC) and the Advanced Wellbeing Research Centre (AWRC).

The region is characterised by its strong manufacturing base and legacy, which has increasingly been integrated into the Healthtech sector, creating resilience within the region. Despite this expertise, the region also faces challenges: "Yorkshire and the Humber have some of the worst figures in the English regions with regard to the health of its population." (University of Huddersfield, 2023)

However, the region is not one homogenous cluster of activity. Instead, it is made up of a number of distinctly different areas within Healthtech, located in different areas of the Yorkshire region, each with their own strengths and challenges. Herein lies the opportunity - to develop a region that collaborates to draw on complementary strengths as well as pool resources to address some of the



shared challenges, such as awareness of funding programmes that have recently moved from a regional to national level.

Geography and size: The geography and size of the Yorkshire region presents both challenges and opportunities for the development of Healthtech. Historically, the region has been made up of several somewhat overlapping Local Enterprise Partnership (LEP) and Mayoral Combined Authorities (Sheffield City Region and South Yorkshire Combined Authority, West Yorkshire LEP and Combined Authority, York and North Yorkshire LEP, and the Hull and East Yorkshire LEP). Interviewees placed the emphasis for Healthtech almost entirely on West and South Yorkshire, which is supported by the figure below.

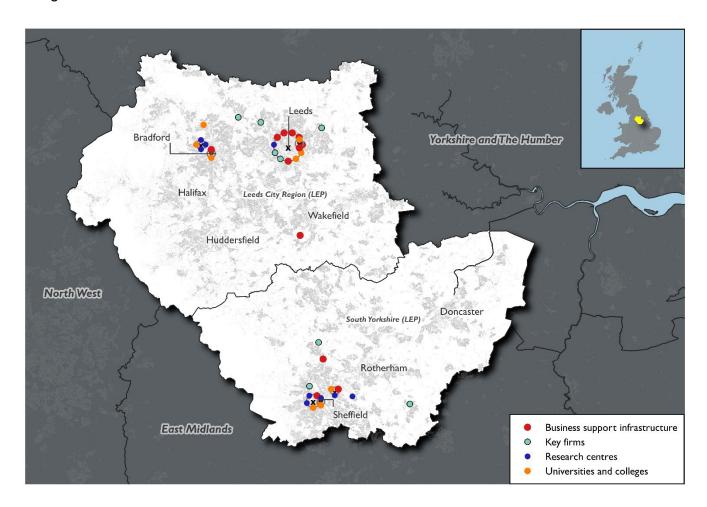


Figure 1: Healthtech Yorkshire map.

Figure I shows that within West and South Yorkshire, there are several distinct pockets of activity. West Yorkshire is made up of five boroughs in the Combined Authority - Leeds, Bradford, Huddersfield, Wakefield and Calderdale (Halifax). Each of these areas has its own distinct identity and strengths. This fragmentation can make it difficult to create a cohesive narrative and to coordinate efforts towards Healthtech cluster development. However, the Olympic Legacy Park in South Yorkshire provides an interesting case that highlights the potential to act locally but think globally, helping to bring people together and create a more cohesive narrative. Interviewees argued that the grand societal challenges around health are not unique to one specific area, but are instead present throughout the region, nation and indeed the globe. By forming a shared vision of the common



challenges to be addressed, but leveraging local strengths in addressing them, the Yorkshire region can overcome some of the current fragmentation across a Healthtech sector with diverse activities.

There appear to be differing views on the apparent size and fragmentation of the region. Some believe that it makes it difficult for businesses to recruit people and for logistics, while others suggest that it could be an advantage as talent flows across the entire area, providing opportunities for knowledge spillovers and related activity.

Areas of potential future growth: As the world becomes more digitised, opportunities will increasingly arise not only in digital health, but in integrating digital health into other sectors of Healthtech. The complementary capabilities between South and West Yorkshire make the region a strong contender for growth in the digitalisation of Healthtech. By working together these regions can leverage their strengths to drive innovation and development in the areas of implant technology and digital health, ultimately improving patient outcomes and the overall healthcare system.

West Yorkshire is known for its expertise in developing implants, such as those used in orthopaedics and spinal surgery. However, the region lacks expertise in materials and producing at scale, which are crucial aspects of implant development. South Yorkshire, on the other hand, possesses a wealth of expertise in materials and scale production, making it an ideal partner for West Yorkshire in the development of implant technology. By working together, these two regions can combine their strengths to create more advanced and effective implants for patients.

In addition to its expertise in materials and scaled production, South Yorkshire also boasts a wealth of digital assets, such as digital health platforms and telemedicine solutions. However, a key challenge for the region is a lack of data to support the development and deployment of these digital health solutions. This is where West Yorkshire comes in, as it is home to the Leeds Care Records, a comprehensive electronic health record system that can provide the data needed to support South Yorkshire's digital health efforts. Furthermore, West Yorkshire has the governance structures, such as trusted research environments, in place to ensure that the data is used responsibly. By working together, South and West Yorkshire can leverage their digital assets and data to create innovative digital health solutions that can be scaled nationally and globally.

Reflections: While this region does not have a highly integrated cluster in the typical sense, partly due to its geographical layout, there appears to be significant potential to leverage the complementarities of different Medtech and Healthtech strengths in each place to create greater innovation potential. With the healthcare system, and the technology sectors that it relies on, poised to grow, these industries and their expertise are likely to be more in demand.

Core Assets

Market structure and anchor firms: Interviewees noted that you need larger firms to conduct capital intensive research and development and generate significant employment, and smaller companies to supply them. The Yorkshire region has successfully attracted large firms several times. For example, the Leeds LEP attracted LabCorp, a global diagnostics and drug development company, which has recently doubled in size, retaining and creating almost 300 highly skilled scientific and healthcare jobs in the city, and is creating a new 100 bed facility for clinical trials (Yorkshire Post, 2021). Interviewees suggested that international firms from the Nordics (e.g. VAR Healthcare - see



Digital Health (2022a)) and Israel (Digital Health, 2022b) chose Leeds as their UK base rather than London. This is due to the critical mass in Leeds, and support in the region including investor networks, incubation support, and accelerator programmes.

Interviews suggest that for smaller firms, it's a question of how you influence and utilise large firms to support those startups and spinouts. West Yorkshire, in particular, has a strong environment for early-stage growth in the Medtech sector. Leeds, for example, has a strong track record in this area by attracting companies like Johnson & Johnson. Additionally, the city has a diverse digital sector, with digital health being one of the key areas of focus. Anchors such as Channel 4 and the big 4 consulting companies provide a reservoir of digital talent that can spill over into digital health firms. Four of the largest digital health providers to the NHS are based in the region: TPP, EMIS, Mastek and BJSS. They have strong ties to institutional anchors in Leeds, with NHSX and NHS Digital based out of the city region. For example, BJSS is a spinout from NHS Digital, and the former leaders of NHS Digital and Mastek, creating a supportive environment for the development of digital health solutions. In addition Pharmacy2U is the UKs biggest pharmacy, offering online prescriptions and pharmacy services since 1999.

The market in South Yorkshire is also strong, with anchor firms such as Swann Morton, which develops surgical equipment, and Canon, who have invested £15m into the Olympic legacy site AAI diagnostic research centre (Canon Medical, 2022). Canon Medical have also partnered with the AWRC (Insider Media, 2022) who have supported over 28 startups through their accelerator programme in Sheffield (Sheffield Hallam University, 2021).

In terms of new healthtech firms, "startups more often than not originate from universities but not exclusively - we see some clinical entrepreneurs developing companies all over the region". In this sense, "universities are at the heart of the cluster".

Higher education and training institutions: The role of higher education and training institutions cannot be overstated in the development of the Yorkshire Healthtech cluster. In Yorkshire and Humber, there are 12 universities and 34 Further Education Colleges, which cover 10% of the UK graduate population. The University of Leeds, with the Centre for Health, Technologies and Social Practice is at the heart of the West Yorkshire cluster, focussed on surgical tools and implants. However, this is by no means the whole of the story. Leeds Beckett University does a lot of work in its own right (Centre for Health Promotion Research). Interviewees note that this is mostly focussed on digital health. The University of Bradford, together with the University of Leeds, conducts research into health and wellbeing through the Wolfson Centre for Applied Health Research.

South Yorkshire has strengths around key university-based institutions such as AMRC (Sheffield University) and AWRC (Sheffield Hallam University). The two universities develop many bids together, benefitting jointly from large sums of industry money. Other research centres include the Health Research institute (Sheffield Hallam University).

Support structures and infrastructure: In addition to the anchor firms and higher education and training institutions, there are also support structures in place to drive the growth of Healthtech in the region. These support structures include the Nexus in the centre of Leeds, associated with Leeds university, Leeds Beckett University's new Leeds Health and Social Care Hub (see Leeds Beckett University, 2022), Bradford University's Digital Health Enterprise Zone, and Sheffield's Olympic Legacy Park, and Huddersfield Health Innovation Campus.



The Yorkshire and Humber Academic Health Science Network (YHAHSN), Medilink, and Association of British Healthtech Industries (ABHI) all work together to create a triangle of academia, commercial, and local and regional government, which helps to support the growth of the Healthtech cluster. The YHAHSN runs an accelerator programme called Propel, which helps international firms bring their digital health innovations to the UK and understand the NHS. This helps companies to build their value proposition and stress test their products in a trial setting. Many innovators choose to come to West Yorkshire to test their innovation in the real world and then scale beyond that, using the data from West Yorkshire.

Access to data in NHSX and NHS digital is a key reason for locating in the region. Leeds Care Records, for example, provides access to 2.3 million patient records, which is likely to be expanded to 8.1 million across Yorkshire (Humber and North Yorkshire Health and Care Partnership 2023). This is one of the largest healthcare datasets in the country. The Born in Bradford dataset, which is connected to the University of Leeds and University of Bradford, has led to strength in areas such as health analytics, particularly at the Wolfson Centre for Applied Health Research in Bradford. The Bradford Institute for Health Research, established by the Bradford Teaching Hospitals NHS Foundation Trust, has an out-patient facility for researchers to conduct clinical research.

Innovation Hubs, led by the YHAHSN and ICSs in both West and South Yorkshire provide a gateway for innovation and entrepreneurs into the healthcare system. These hubs are key to matching between NHS and care system needs and what is provided in the market. They work with companies to develop the products and services that are needed.

Embedding Healthtech innovation in the NHS is slow and difficult, but with the headquarters for NHSX and Digital, the Leeds Teaching Hospital Trust, and the Sheffield Teaching Hospital there is a tangible regional advantage to improving this journey for firms in the cluster.

Finance: Interviewees noted that one of the biggest complaints among companies, particularly smaller ones such as SMEs and microenterprises, is related to finance. They said that from the proof of concept stage to further down the journey, finding adequate funding can be a major obstacle. In a recent report, access to finance was identified as a risk by over 10% of respondents (West Yorkshire Combined Authority, 2019). The report identifies 10 investors active in digital health, with over 33 fundraisers across Healthtech in West Yorkshire.

There are also some new initiatives worth exploring. For example, Northern Gritstone, which is a partnership between Sheffield, Leeds, and Manchester University, provides finance for spinouts. Sure Valley recently launched a new funding programme in the region (Yorkshire Post, 2022). Additionally, the YHAHSN (2023) highlights the numerous funding programmes available.

In West Yorkshire, interviewees highlighted that there is an active investment network that can provide additional opportunities for companies. Additionally, investment in the Healthtech sector is global, as investors from all over the world are attracted to companies that address global problems. For example, interviewees described how a recent delegation from Singapore was interested in investing in the region 'because the problems they address are global.'

However, there are also changes to international funding sources. It is important to note that EU funding for the innovation support programmes is coming to an end. Although the UK has its own funding programmes, such as the Strategic Priorities Fund and Shared Prosperity Fund, and devolved funding from the presence of a mayor, some interviewees expressed concerns about the uncertainty



currently associated with innovation funding. In response, InnovateUK has funded a joint initiative between the CPI and the ABHI to help Healthtech companies navigate EU regulations.

Overall, while funding can be a challenge for Healthtech companies in Yorkshire, there are a number of new initiatives and opportunities available that can help companies navigate these challenges. It is important for Healthtech companies to stay informed about new funding programmes in the rapidly changing landscape, which may require support from network and support organisations.

Reflections: The region boasts a large number of assets that make it very attractive for Healthtech cluster development. The region has significant strengths in research and several specialised research centres engage in both knowledge exchange and business support activities. Many startups are spin outs from that research infrastructure. The market for Healthtech is global in nature, with local companies often seeking to obtain US FDA approval and setting their sights on a global impact. While attractive for the potential to scale, it also reflects a significant challenge in the UK Healthtech sector as a whole: "businesses are always saying it's easier to sell abroad than it is into the NHS and social care system - this is one of the biggest barriers that needs to be broken down. The problem in those systems is their capacity to articulate their need and then finding innovations that match that." The Yorkshire region, and West Yorkshire in particular, has an established advantage in access to resources that help to overcome these challenges.

Skills

Talent pool: The Yorkshire region has a strong talent pool for Healthtech due to the related fintech and IT sectors, the large NHS presence, and a legacy manufacturing industry. As businesses look to expand in this area, they are increasingly turning to the region's universities as a source of skilled workers.

It's a challenge everywhere. But we have the universities. We're a net importer of graduates - one of the only importers outside London. We also retain a lot.

Several interviewees stated that West Yorkshire has better retention rates for its graduates than other comparable cities. Companies are able to attract and retain top talent, which allows them to build and maintain a skilled workforce over the long term. This is a key factor in the success of the region's Healthtech sector, as it allows companies to focus on developing cutting-edge technologies and products without worrying about losing key employees.

In addition to its strong talent pool, the Yorkshire region offers a diverse range of skills and capabilities (Leeds City Region, 2022). "Both West and South Yorkshire have different but complementary skills and capabilities and there is scope to bring those together". This diversity allows companies to tap into a wide range of expertise, which in turn helps to drive innovation and growth.

Despite the many benefits of the Yorkshire talent pool, there are still high value jobs that cannot be filled without talent external to the region. A recent report suggested that access to local talent was the most important issue for Healthtech firms (West Yorkshire Combined Authority, 2019). However, this is not necessarily a negative for the Healthtech sector. In fact, it presents an opportunity for the region to continue to attract top talent from around the world, further strengthening its position as a



leader in the Healthtech industry, and demonstrating to local skills providers the demand for courses to develop this talent locally.

Local skills provision: In Yorkshire, local skills provision is driven by the LEPs and the Mayoral Combined Authorities (MCAs) across both South and West regions. In West Yorkshire, for example, the Digital Skills Academy was established as a leadership initiative to address crucial shortcomings in the region's digital skills.

One key aspect of skills provision in West Yorkshire is the consortium of colleges that sits on the decision-making committees. These colleges are in a position of influence when it comes to shaping the skills through course provision in the region.

In Sheffield, there are recent improvements in skills provision as well. For example, the University Technology College, which is part of the Olympic Legacy Park, both develops and markets the skills and jobs in the sector. Five years ago, appropriate technical courses related to Healthtech were unavailable in the region, but that is not the case anymore. Recently, sector-specific courses such as Sheffield Hallam's MSc in Al and data, which focuses purely on Healthcare, are increasingly plugging the training gaps. Interviewees said that this is especially important for the Medtech sector, as the sector-specific knowledge is complicated and fragmented compared to sectors like Agritech.

To address this, skills provision needs to be made more responsive to the needs of the region, making it more self-reliant. One way to achieve this is through programmes funded by industry and steered by groups that include anchors such as Canon and the NHS. The University Technology College, for example, has programmes of this kind, which aim to develop talent that is responsive to the needs of the cluster. With the right approach, local skills provision in Yorkshire can help to address the region's challenges and create a more vibrant and sustainable economy.

Reflections: While there is generally a strong skills ecosystem, interviewees still highlighted that the Yorkshire region struggles to attract the right people for the right jobs. When high value jobs are created, it draws in external people: "Skills are always the key driver for firms looking to expand in a region". Improved skills provision, which is very much on the radar of higher and further education providers and their stakeholders, would make the region more self-reliant.

Knowledge Exchange

Firm research and development practices: Research and development (R&D) is a key part of knowledge exchange in Healthtech. Firms work with healthcare providers to research and develop new products and technologies that can be used to improve patient care. An interviewee described how a firm partnered with Sheffield Children's Hospital in South Yorkshire to develop an offering, and a lot of the R&D was done with the hospital. Once the innovation was developed and implemented, it was evaluated with the hospital and the data collected was used to scale up and spread the product across the rest of the NHS.

The Leeds teaching hospital and Sheffield teaching hospital, and Sheffield Children's hospitals are all research active. However, interviewees noted that Sheffield has yet to invest in research as much as Leeds.



Knowledge sharing and flows: In Yorkshire, there are various institutions and initiatives that facilitate the sharing of knowledge and the flow of information between different organisations and individuals. The AWRC provides a platform for firms to connect with academic researchers and experts, allowing for the sharing of knowledge and the development of new ideas.

In Leeds, the Combined Authority brings together different stakeholders, including the NHS, local government, and businesses, to work towards a common goal of improving the health of the population. Additionally, NHSX, which is based in the region, aims to drive innovation and digital transformation in the NHS.

DataCan is another organisation in the region that brings together cancer data for better cancer diagnostics. This initiative allows for the sharing of data and expertise among different organisations, enabling the development of more effective cancer treatments. Additionally, Leeds care records is an international exemplar of bringing together patient data for better whole-life outcomes.

Further, collaboration between academia, industry and local and regional government is encouraged via Medilink, ABHI, and YHAHSN which creates an excellent environment for startups and high growth firms in the region. This collaboration allows for the sharing of knowledge and resources, and provides a supportive environment for the development of new ideas and technologies. In West Yorkshire, the Leeds Academic Health Partnership brings together the universities, NHS, council and colleges, as well as industry and third sector organisations.

Finally, Both South and West Yorkshire have Innovation hubs. The South Yorkshire hub makes up for the lack of an Academic Health Partnership in the region - it brings together the Integrated Care System to address some of the challenges.

Knowledge access and cultures: Interviews suggested that there was a culture of knowledge sharing both between firms and between industry, universities and the NHS. Examples of employment mobility between the NHS and private enterprise was described in a positive light and academic interviewees were actively engaged with private enterprise to both foster startups and to discuss applications of their research.

Firm network relationships: West Yorkshire is a very well-connected cluster:

Everybody knows everybody. Everybody works together. Because it is so well connected, there isn't really a need for a networking service because any access connects one to everybody else. Companies from the Nordics choose this region because the network is so strong and there is a full suite of support.

In contrast, South Yorkshire has traditionally been more fragmented and poorly connected in terms of its Healthtech sector. Interviewees note that actors in the sector may not be aware of each other's existence, and there is a lack of collaboration and cooperation among companies and organisations. However, interviewees believe that South Yorkshire is similar to where West Yorkshire was only 5 years ago, offering an optimistic path to improved connectivity in the region.

Reflections: The Yorkshire region has strong research infrastructure and Medtech/Healthtech are a highly R&D dependent set of industries. Researchers and firms are linked through a variety of platforms and initiatives that facilitate knowledge sharing. However, networking relationships differ across parts of the region. Where West Yorkshire benefits from being a "small world" in which informal interpersonal relationships play an important role, interviewees in South Yorkshire



reported less of this kind of activity. In this case, it is helpful to have formal organisations performing that bridging role in networks and encouraging interaction.

Networks of Coordination

Governance in Yorkshire is complex at first sight, with numerous LEPs and MCAs. Some of these cover overlapping geography. There appear to be current efforts to coordinate between MCAs, particularly with regard to Healthtech, and this is supported by nationwide efforts for increased coordination through Integrated Care Systems.

Integrated Care Systems partnerships were recently established on a statutory basis (NHS England, 2023) throughout England. This formalises the joining up of health care services and includes all uppertier local authorities, together with a broad alliance of local partners. In West Yorkshire, partners include national partners such as Healthwatch, and voluntary, community and social enterprise sector organisations, and benefitting from local Healthtech innovation is considered throughout their recent 5-year plan (West Yorkshire and Harrogate Health and Care Partnership, 2019). In South Yorkshire, the Integrated Care System's 5-year plan (South Yorkshire and Bassetlaw Integrated Care System, 2019) is less explicit about Healthtech innovation but frequently anticipates the role that the Innovation hub will play to identify and address unmet needs (see South Yorkshire Integrated Care System, 2023).

The new development of separate ICSs would benefit from involvement from Yorkshire wide actors. The YHAHSN, spanning both South and West Yorkshire, is ideally placed to bring these together.

Reflections: Despite the proliferation of research networks and support structures, there are no Medtech/Healthtech organisations covering the entire Yorkshire area. Given the growing significance of these industries, there may be a role for the LEPs/Combined Authorities to come together to lead an effort to convene activities and coordinate their evolving Healthtech strategies.

Discussion: Innovation opportunities and support needs

Evolution and market opportunities: Innovation in the field of digital health is rapidly growing, offering new opportunities for healthcare providers and patients alike. One such opportunity is the use of large datasets to predict and diagnose health issues. By analysing vast amounts of data, healthcare providers can gain valuable insights into the health and wellbeing of their patients, allowing them to provide more personalised and effective care.

For South and West Yorkshire, there is potential for complementary evolution within digital health. South Yorkshire, for example, has the opportunity to be more applied in the wellbeing space by drawing on the data infrastructure and architecture in West Yorkshire, to jointly build digital health solutions.

Interviewees highlight that the LEP in South Yorkshire is beginning to recognize the potential of digital health, based on the journey that West Yorkshire has been on and the scale of assets they have in their region.



However, in order to fully realise the potential of digital health in these regions, support and investment are needed. This includes funding for R&D, as well as the infrastructure and training necessary to implement and maintain these solutions. Additionally, collaboration between healthcare providers, researchers, and industry leaders is crucial to ensure that digital health solutions are effective and accessible to all.

Resilience: The West and South Yorkshire Healthtech clusters are both built on strong legacies of manufacturing, with significant industry anchors and excellent research capabilities which suggest that both clusters are likely resilient and able to continue their development

Areas of potential support and intervention:

- Build on the success of the Olympic Legacy Park: One of the keys to unlocking potential in the Yorkshire region, with pockets of differing activity throughout the region, is to take a lesson from the Olympic Legacy Park, which demonstrates that acting extremely locally while addressing a large national and global problem can provide a vehicle to make meaningful progress. The challenges that are faced locally in Yorkshire are of interest nationally and globally, and the Olympic Legacy Park serves as a testbed for ideas that can be scaled.
 - The growth of the Olympic Legacy Park is founded on addressing grand challenges, rather than focusing on a particular technology or sector. This approach enables interdisciplinary, multisector innovation and may provide a clue for how the Healthtech cluster in Yorkshire may continue to evolve. Instead of focusing on underlying capabilities or regional specialisations, the region can focus on addressing shared societal challenges.
- Encourage inter-regional collaboration: While there are opportunities to integrate and collaborate between South and West Yorkshire to create a complementary cluster, it is possible that the two regions will compete on certain attractive sectors such as digital health, and therefore stop collaborating. Leadership from both regions is needed to continually foster and coordinate to create regional collaboration rather than devolving into regional competition. Innovate UK should participate in new initiatives to look at the region as a whole and there is an opportunity to bring together under one banner numerous different areas with different political leadership. A vision is needed to bring everything together and create more links to South Yorkshire.
- Encourage interfirm collaboration and networking: The region should also provide
 awareness of new programmes and support small/new firms with the capacity to apply. A
 Healthtech catalyst can bring together investors and businesses, and UKRI can complement
 this by deepening the relationship with the academic health science networks to direct
 support to where it's needed.

Reflections: There is a lot of potential for Yorkshire to become a leader in the field of Healthtech, but it will require a concerted effort to articulate and champion particular societal challenges to create a strong, attractive cluster for further innovation. The support structures are in place, and it is up to the region to leverage its unique strengths and work together to achieve this goal.



References

Canon Medical (2022). Park community arena development by Canon Medical Systems announced at Sheffield Olympic Legacy Park. Available at: https://uk.medical.canon/park-community-arena-developed-by-canon-medical-systems-announced-at-sheffield-olympic-legacy-park/

Digital Health (2022a). Leeds Teaching Hospitals welcomes Nordic healthcare platform. Available at: https://www.digitalhealth.net/2022/06/leeds-teaching-hospitals-nordic-platform/

Digital Health (2022b). Leeds Teaching Hospitals joins initiative to foster international collaboration. Available at: https://www.digitalhealth.net/2022/06/leeds-teaching-hospitals-joins-initiative-to-foster-international-collaboration/

Humber and North Yorkshire Health and Care Partnership (2023). Available at: https://northyorkshireccg.nhs.uk/clinical-portal/yorkshire-and-humber-care-record/

Insider Media (2022). AWRC and Canon Medical UK sign partnership agreement. Available at: https://www.insidermedia.com/news/yorkshire/awrc-and-canon-medical-uk-sign-partnership-agreement

Leeds Beckett University (2022). New HEalth and Social Care Hub launches in Leeds. Available at: https://www.leedsbeckett.ac.uk/news/2022/07/new-health-and-social-care-hub-launches-in-leeds/

Leeds City Region (2022). Local Skills Report. Available at: https://www.westyorks-ca.gov.uk/media/7885/local-skills-report-2022-final-pdf.

NHS England (2023). What are integrated care systems? Available at: https://www.england.nhs.uk/integratedcare/what-is-integrated-care/

Sheffield Hallam University (2021). AWRC Wellbeing Accelerator Showcase. Available at: https://www.shu.ac.uk/advanced-wellbeing-research-centre/accelerator/news/awrc-wellbeing-accelerator-showcase

South Yorkshire and Bassetlaw Integrated Care System (2019). Available at: <u>Five Year Plan.</u> https://syics.co.uk/application/files/7716/0087/7705/ SYB ICS Five Year Plan A4 Report.WEB-060320.pdf

South Yorkshire Integrated Care System (2023). Innovation Hub. Available at: https://syics.co.uk/innovation

South Yorkshire MCA (2021). South Yorkshire Health and Wellbeing Assets Study. Available at: https://southyorkshire-ca.gov.uk/getmedia/8dcd0920-7e0c-4bde-8698-ee61b6c6d352/SY Health-and-Wellbeing-Assets-Study.pdf

University of Huddersfield (2023). National Health Innovation Campus. Available at: https://www.hud.ac.uk/our-buildings/national-health-innovation/

West Yorkshire and Harrogate Health and Care Partnership (2019). Better health and wellbeing for everyone: Our five year plan. Available at:

https://www.wypartnership.co.uk/application/files/6815/8451/9232/Better_Health_and_Wellbeing_for_Everyone.pdf

West Yorkshire Combined Authority (2019). Digital Health Sector Report. Available at: https://www.the-lep.com/media/3059/20190822-wyca-digital-health-sector-report-final.pdf



Yorkshire Post (2021). Up to 300 jobs planned for redevelopment of Drapers Yard in Leeds's South Bank into a new Labcorp medical facility. Available at: https://www.yorkshirepost.co.uk/business/up-to-300-jobs-planned-for-redevelopment-of-drapers-yard-in-leedss-south-bank-into-a-new-labcorp-medical-facility-3175138

Yorkshire Post (2022). How Sure Valley Ventures aims to help fast growing Yorkshire businesses establish a global presence. Available at: https://www.yorkshire-businesses-establish-a-global-presence-3786469

YHAHSN (2023) Funding Opportunities. Available at: https://www.yhahsn.org.uk/how-we-can-help-you/academia/funding-opportunities/



Dr Jen Nelles (Innovation Caucus, Oxford Brookes University)

Dr Kevin Walsh (Innovation Caucus, Oxford Brookes University)

Dr Michalis Papazoglou (Innovation Caucus, Oxford Brookes University)

Dr Elvis Nyanzu (Innovation Caucus, Oxford Brookes University)

Dr Syahirah Abdul Rahman (Innovation Caucus, Oxford Brookes University)

Professor Tim Vorley (Innovation Caucus, Oxford Brookes University)

Research note

This research is a case study prepared as part of the Understanding Cluster Growth Potential project conducted in partnership with Innovate UK. To receive a copy of the main reports and additional case studies please contact info@innovationcaucus.

Acknowledgements

This research was commissioned by Innovate UK. We are very grateful to the project sponsors at Innovate UK for their input into this research. The interpretations and opinions within this report are those of the authors and may not reflect the policy positions of Innovate UK.

About the Innovation Caucus

The Innovation Caucus supports sustainable innovation-led growth by promoting engagement between the social sciences and the innovation ecosystem. Our members are leading academics from across the social science community, who are engaged in different aspects of innovation research. We connect the social sciences, Innovate UK and the Economic and Social Research Council (ESRC), by providing research insights to inform policy and practice. Professor Tim Vorley is the Academic Lead. The initiative is funded and co-developed by the ESRC and Innovate UK, part of UK Research and Innovation (UKRI). The support of the funders is acknowledged. The views expressed in this piece are those of the authors and do not necessarily represent those of the funders.