

North East England

Excelling in health and life sciences

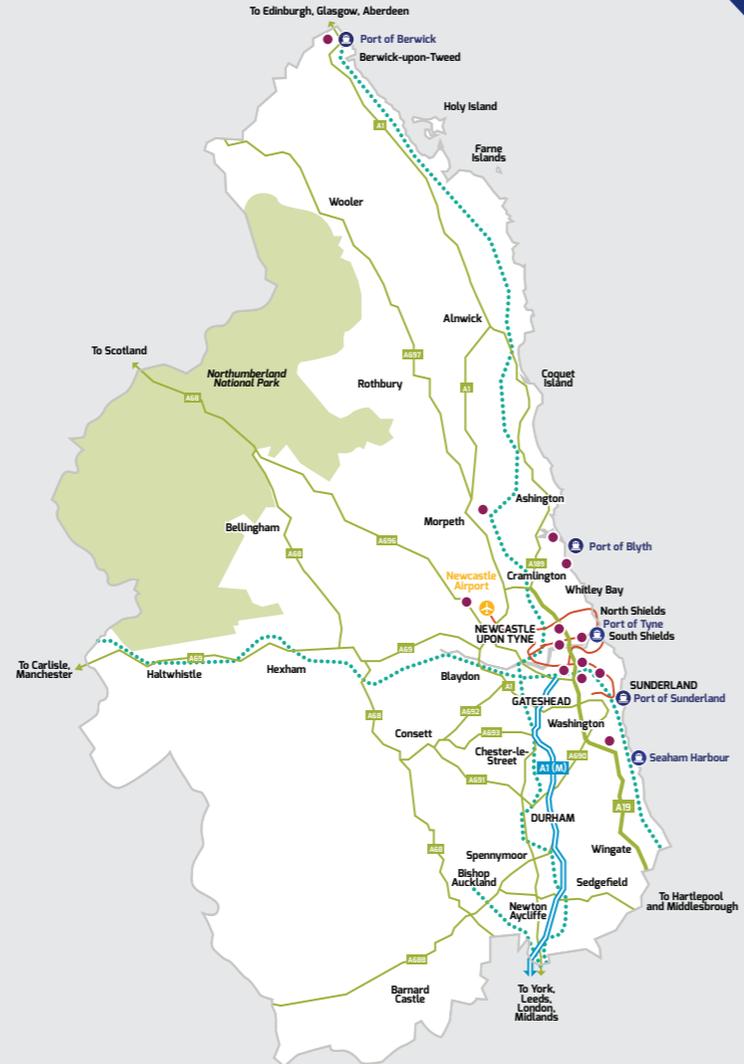
**PHARMACEUTICAL MANUFACTURING · CLINICAL RESEARCH AND TRANSLATION
RESPONDING TO AN AGEING POPULATION**

nelep.co.uk



North East Local Enterprise area

- **Principal rail links**
- **Tyne & Wear Metro**
- **LEP boundary**
- = **Motorway**
- **Key routes**
- **Enterprise Zones**
-  **Ports**
-  **Airports**



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The North East has a diverse and vibrant clustering of life sciences, manufacturing and health services. I believe that the work that is being done in the North East can support more growth in the region and make a strong contribution to a wider UK initiative to promote research collaboration, partnership and investment globally as part of the Government's Life Sciences Industrial Strategy.

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John Bell GBE, FRS, FMedSci

Regius Professor of Medicine, University of Oxford. Chairman, Office for the Strategic Coordination of Health Research. Sponsor of the Life Sciences Industrial Strategy, a Government White Paper.

North East England: A unique environment for health and life sciences and medicines manufacturing. We have excellence in quality of care, health innovation, working with companies and ageing.

Global health services and markets are being shaped by rapid development of health care technologies, resulting in a shift towards more personalised treatments and the need to respond to the health and social care implications of an ageing population. The North East of England has a unique combination of assets, capabilities and networks that can support the delivery of the UK's response to this challenge.

Our key assets and areas of opportunity

Our regions life scientists and researchers, innovative businesses, medicines manufacturers and health care professionals, are contributing to the improvement of global health, creating jobs and generating wealth for the region and the UK. We have:

A thriving life science community with:

- World leading health research and outstanding NHS healthcare organisations, with a record of health innovation and working with companies
- A vibrant SME base in medical technologies including precision medicine and medical technologies, and testing and clinical trials
- Centres of excellence in precision medicine, digital health, advanced therapies and biopharma manufacturing.

An established pharmaceuticals manufacturing sector:

- An established, globally competitive sector including 15 pharmaceutical manufacturers with deep sector knowledge and a global outlook

- A diverse range of business models, international links and a strong export performance as they respond proactively to a challenging global outlook
- Direct links to the UK Catapult Network, indirectly through the Centre for Process Innovation which operates a number of noted innovation facilities in the region.

An internationally recognised specialism in ageing and age-related diseases:

- Newcastle is a globally recognised hub for the development of medical science and social research in response to the challenges and opportunities of ageing populations
- The Newcastle campus for ageing and vitality is Europe's largest multidisciplinary site focused on ageing and the National Innovation Centre for Ageing will drive innovation delivery in this area.

Our assets are located within a well-networked environment which includes key sites and facilities dedicated to the development of health and life sciences sectors. We have a number of business clusters and networks and a strong education offer in both health and associated sciences.



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Through the health and life sciences working group, we bring together the North East's health, life sciences research and manufacturing community. We are committed to ensuring that our unique assets continue to flourish and deliver real economic and social impact. A key part of this mission is to project our strengths to the rest of the UK and beyond, and to identify opportunities for collaboration and investment which can enable the strengthening of our contribution to global health and national prosperity.

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Michael Whitaker

Member of North East LEP innovation board and chair of the North East LEP life sciences working group



Working together through the health and life sciences working group.

Partners in the region are working closely together, supported by the North East Local Enterprise Partnership, to identify and deliver opportunities to support growth and employment in the region.

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The North East of England's immense capability in life sciences is reflected in the growth of this sector and its substantial offer for business.

The region is a world leader in clinical research which can boast national leadership in ageing and smart data. Its rich asset base includes expertise in precision medicine, rare disease and cancer as well as pathology and diagnostics. It is home to outstanding research centres including the National Institute of Health Research (NIHR) Innovation Observatory, the National Innovation Centre for Ageing, the National Innovation Centre for Data, Newcastle and Durham universities and nationally leading NHS teaching trusts.

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Dr Hakim Yadi
OBE CEO of the Northern Health Science Alliance

What the data tells us about the sector

Pharmaceuticals manufacturing

- The manufacture of pharmaceutical products contributed £590 million to North East Gross Value Added in 2016, with a location quotient of 1.6. Pharmaceuticals is one of the highest productivity sectors globally. The North East business base includes:

 71 companies in **biopharma**, employing 4,001 people and a turnover of **£594 m**

 91 companies in **medtech**, employing 2,570 people and a turnover of **£505 m**

- In the wider life sciences community, 50 life sciences companies were formed in the North East region between 2007 and 2016 employing 279 employees and generating a turnover of £21.7 million.

Research excellence

- The 2014 Research Excellence Framework rated 29% of North East research in biological sciences as 4*, as was 22% of research in

psychology, psychiatry and neuroscience and 19% in clinical medicine². 47% of the research in biological sciences undertaken by Newcastle University is rated as 4*

- The Witty Review³ rated North East universities in the top 20 for research publications for 11 subjects including life sciences and regenerative medicine
- Between 2007 and 2017, North East organisations secured funding of £94 million from the Biotechnology and Biological Sciences Research Council and £118 million from the Medical Research Council
- North East Health Trusts are UK leading for their involvement in clinical research, with Newcastle Hospitals NHS Trust being ranked first for the last six years.

Ageing

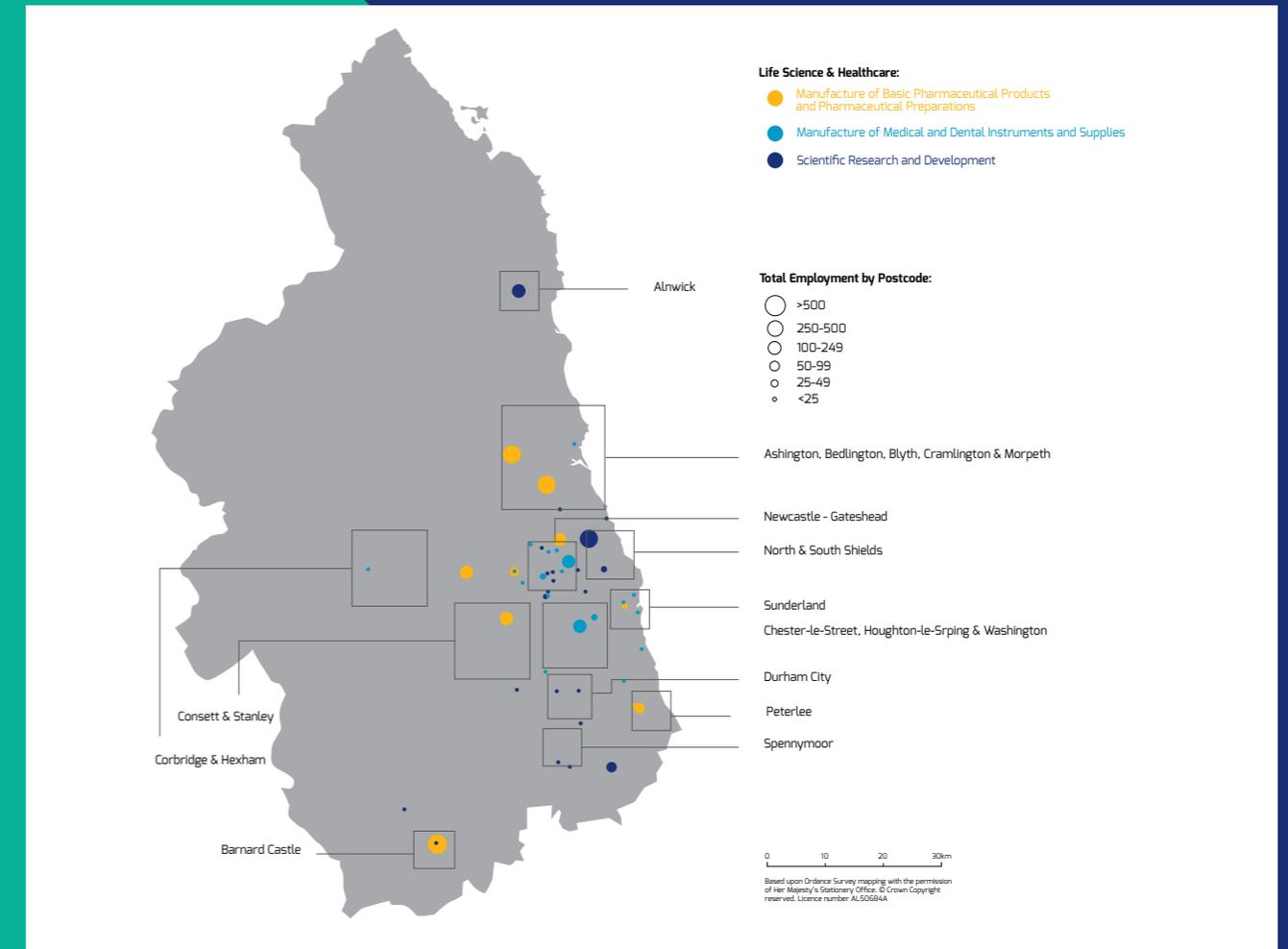
The Newcastle University Institute for Ageing comprises a network of over **500 researchers**

with a wider network of academic and external collaborators contributing to the regions outstanding reputation for research into ageing.

1 Office for Life Sciences
2 Defined as world-leading in terms of originality, significance and rigour
3 Encouraging a British Invention Revolution, 2013

What does the health and life science sector look like?

The map below shows the clustering of North East health and life sciences businesses by employment numbers.



The North East health and life sciences ecosystem

The North East science, research and innovation eco-system

The North East hosts an internationally recognised innovation eco-system and translation environment including:

- World class science and research across four universities
- An outstanding and innovation-driven healthcare system with a strong and high-performing clinical trials community
- Being globally focused with strong trade flows, particularly in pharmaceutical manufacturing
- A vibrant and effective innovation environment
- Research and innovation sites hosting a range of innovation hubs and facilities including national centres of excellence
- A broad and high-quality education offer with more than 40,000 higher education students studying STEM subjects
- With dedicated scaleup support for those that have the potential to grow rapidly.

World class science and research across four universities

Newcastle University

Ageing and health

With over 600 academic staff involved in different aspects of ageing research, Newcastle is an acknowledged leader in the scientific response to global demographic change. Key areas of research and learning include:

- The process of ageing
- Ageing well
- Societal responses to the global phenomenon of ageing in areas including finance, culture and social relations.

Within the university, the Institute of Ageing acts as a hub, drawing together staff from across the university to focus on a wide-ranging inter-disciplinary programme focused on research and innovation, engagement and knowledge transfer, and learning and teaching. A number of centres are developing within the institute focused on specific issues and opportunities including:

- The National Institute of Health Research (NIHR) funded Biomedical Research Centre in ageing and long term conditions

and Biomedical Research Unit in Lewy Body Dementia, both collaborations with the Newcastle upon Tyne Hospitals NHS Foundation Trust.

They are supported by strong collaboration with Newcastle based research institutes;

- Northern Institute for Cancer Research
- Institute of Cellular Medicine
- Institute of Genetic Medicine
- Institute of Neuroscience.
- The National Innovation Centre for Ageing (NICA) works with business and partners to develop solutions to a range of age related challenges and opportunities. NICA is co-located with the National Innovation Centre for Data offering a platform for collaborative innovation in digital solutions.

Precision medicine

Newcastle has a well developed programme focused on precision medicines. It leads two stratified medicine consortia funded by the Medical Research Council and is a key partner in three others. It co-chairs the Rare Diseases Translational

Research Collaboration funded by the NIHR with leadership of work focused on diseases of the liver. It hosts:

- The Wellcome Trust Centre for Mitochondrial Disease
- The Medical Research Council Single-Cell Functional Genomics Unit.

Rare diseases and cancer

Newcastle University's Institute of Genetics, based at the International Centre for Life, is acknowledged for its world leading research into rare diseases. This is an area of research with increasing worldwide recognition of the need for a specialised focus. The Newcastle facility combines research with practical diagnosis, treatment and care. The Northern Institute for Cancer Research (NICR), is a multidisciplinary research institute which acts as a national centre of excellence for clinical trials and development of bio-markers for cancer drug discovery focused on both adult and childhood cancer. As part of the NIHR network of experimental cancer medicine centres it helps to ensure that the UK remains at the forefront of international development of cancer therapies.

NHS collaboration

A feature of the work of the university is its extensive partnership working with the NHS, in particular with Newcastle-Upon-Tyne Hospitals NHS Foundation Trust (NUTH). Newcastle's joint NHS/university translational infrastructure includes:

- **Clinical research:** the NIHR Clinical Research Facility is a partnership between NUTH, the leading UK Trust for recruitment to clinical trials, and Newcastle University. www.ac.uk/crf
- **Diagnostics North East (DNE):** Newcastle is the only UK centre with a joint Medical Research Centre/Engineering and Physical Sciences Research Council supported Molecular Pathology Node. DNE also hosts Newcastle's In Vitro Diagnostic Co-operative and the National Institute of Health Research funded Innovation Observatory. www.diagnosticsnortheast.org
- **Genomics:** the North East also hosts a Medical Research Council Single Cell Functional Genomics Unit, a Genomics Medicine Centre, and an External Assessment Centre for the National Institute for Health and Care Excellence.

Sunderland University

In September 2019, Sunderland University will open its new School of Medicine, one of only five new medical schools, established to address the regional imbalance of medical education places across England and to widen access to ensure the profession reflects the communities it serves. With a track-record of excellence in medical education spanning almost 100 years, the University is now well-placed to address the chronic shortage of doctors in the North East. Focusing on GP and Psychiatric training, the new programme will complement existing medical provision in the region and add to the diversity of medical schools in the UK.



Durham University

Durham's interdisciplinary approach to health and life sciences builds on their research excellence and innovative collaboration in a number of areas including;

- Biophysical sciences including major industrial collaborations in biophotonics and biosensors
- Medical humanities, involving collaborations across world leading humanities and social science departments with clinical science and patient groups in mental health and respiratory illness to extend management and care options
- Synthesis of pharmaceutical intermediates; skin biology including wound healing, skin ageing, tissue engineering and regenerative medicine

The university has extensive experience in the secure handling of large datasets sourced from public healthcare data.

Building on common expertise in innovation in formulated products, healthcare photonics and personal care, a strategic partnership with the Centre for Process Innovation (CPI) combines Durham's research excellence in chemistry, biology, physics and engineering with the translational expertise of the CPI.



Northumbria University

Research within two multi disciplinary teams at Northumbria University directly address the health and well being needs of individuals and communities and the challenges faced by life science industries. Key expertise includes:

Health and Integrated Social Care

- **Nutrition:** delivery of controlled human trials determining the efficacy of functional foods and supplements on cognitive function, exercise performance and the gut microbiome
- **Sport and exercise science:** applying knowledge gained from elite athletes to the needs of those with chronic conditions to deploy rehabilitation services into the community
- **Digital health:** expertise in design thinking linked with expertise in computing, human computer interactions and service implementation.

Bio-economy

- **Biocatalysis:** developing enzymes using natural genomic resources optimised via directed evolution techniques. Developing alternatives for chemical processes in the pharmaceutical and food sectors accessed via Nzomics, an enzyme design service.
- **Advanced materials:** controlling of interactions between liquids and surfaces. Particularly, the shaping of liquids by nano-structured surfaces, the creation of particle encapsulated droplets and nematic liquid crystals.
- **Microbiome:** microbial ecosystems from industrial bioprocesses to the human gut, accessed via Nuomics a microbial DNA sequencing service for the agriculture, food and pharma sectors.

In the spotlight

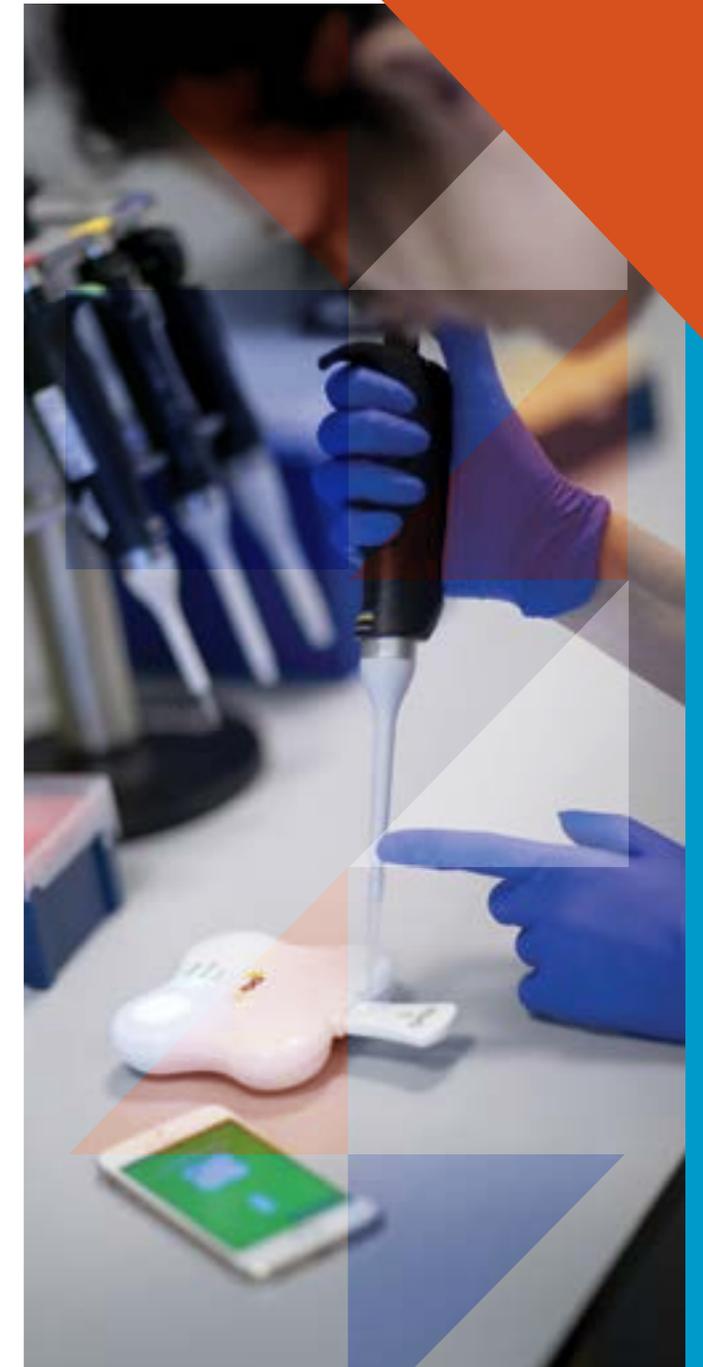
Kromek

Kromek is a Durham University spin out that uses cadmium zinc telluride technology (a semiconductor compound made up of three elements – cadmium, zinc and tellurium), to design, develop and produce x-ray and gamma ray imaging and radiation detection products for the medical, security screening and nuclear markets. Kromek started with two employees and now employs over 100 globally, with over 50 being based at their head quarters at NETPark, in Durham.

'The proximity to the universities and the infrastructure are very important factors for our growth in the North East. Ultimately having a presence in Europe is very valuable to us and we intend to stay at NETPark for many years to come. We'll continue to look at acquisitions, but that's just part of a plan which will also include a lot of organic growth.'



Dr Arnab Basu,
CEO, Kromek



An outstanding and innovation driven healthcare system with a strong and high-performing clinical trials community.



North East Health and Care services

Across the North East LEP area, health and social care services are commissioned and delivered through seven Local Authorities, seven Clinical Commissioning Groups (CCGs) and nine NHS Foundation Trusts (FTs) - six acute trusts, two mental health trusts and one ambulance service.

Despite longstanding health and care challenges in the population in terms of life expectancy and health status, the region has good coverage of high quality primary care services, with fewer patients per GP than other areas and high relative patient satisfaction and practice outcomes standards compared with others areas. Five of the seven CCGs are rated 'good' or 'outstanding' by NHS England, adult social care is rated strongly and three of the Trusts are rated as outstanding by the Care Quality Commission.

These organisations operate outside the North East area in some cases, for example delivering health care services in the Tees Valley and into Cumbria. Many of the trusts have a strong research orientation and work closely with universities and other research and innovation partners in the region, including through as the Academic Health Science Network North East and North Cumbria (AHSN NENC).

Research oriented trusts work with other partners across the north of England through the Northern Health Service Alliance (NHSA) and with clinical and research partners in Scotland

In the spotlight

Newcastle upon Tyne Hospitals NHS Foundation Trust

Newcastle upon Tyne Hospitals NHS Foundation Trust is a world-class provider of healthcare and one of the largest NHS organisations in the UK.

Offering the second highest number of specialist services than any other group of hospitals in the UK, Newcastle upon Tyne Hospitals manages over 1.72 million patient 'contacts' every year. Its flagship services include; the Cardiothoracic Centre at the Freeman Hospital, the Great North Children's Hospital, and the major Trauma Centre at the Royal Victoria Infirmary.

Professor Julia Newton, Deputy Medical Director at Newcastle upon Tyne Hospitals NHS Foundation Trust said; Trust said; "With around 13,500 staff, Newcastle upon Tyne Hospitals is one of the North East's major employers. Because of our outstanding reputation, we attract and retain some of the country's most highly respected healthcare experts.

"Our consultants based here in the North East are at the cutting edge - nationally and internationally - for the latest developments in the fields of ageing, stem cell, cancer, genetics and transplantation. We're recognised as a leader in healthcare research and development.

"We've also recently completed the largest healthcare modernisation programme in the North East, spending £330m to increase the number of beds and operating theatres, and provide more

modern medical facilities such as laboratories and radiology services."

The 2016 Care Quality Commission (CQC) inspection rated Newcastle upon Tyne Hospitals as 'outstanding'.

The Trust is also consistently in the top ranks of the NIHR national league tables for numbers of recruiting studies, numbers of open commercial portfolio studies, and percentage of commercial studies recruiting patients to time and target.

Newcastle upon Tyne Hospital's state of the art clinical research facilities provide the capability to undertake trials ranging from Phase 1 (first in human) to Phase 4 (post-marketing). Newcastle upon Tyne Hospitals also hosts the NIHR Clinical Research Network for the North East and North Cumbria.

On a regional level, the Trust has built strong partnerships with key organisations including the Northern Health Science Alliance and the Academic Health Science Network for North East and North Cumbria. It is the lead partner of a new Northern Alliance Advanced Therapies Treatment Centre, together with advanced therapies companies, universities and the NHS covering the North of England and Scotland.

For more information, visit www.newcastle-hospitals.org.uk

Globally focused pharmaceutical manufacturing

Pharmaceutical manufacturing

The North East pharmaceutical sector is strongly connected to international markets and supply chains, importing raw materials and processing equipment, and exporting the vast majority of manufactured products. It includes a number of contract development and contract manufacturers, key supply chain companies and large multinational drug developers using a range of business models including business services, technology ranges and scales of production.

Key brands include GSK, MSD, Aesica, Sterling, Arcinova and Piramal Healthcare.

North East pharmaceutical manufacturing in the North East LEP area makes GVA contribution estimated to be over **£1.25 billion** per annum



Five pharmaceutical manufacturing sites in the North East are internationally owned. It is a highly efficient sector with competitiveness achieved through

lean working practices, upskilling, reducing or mitigating costs and ever increasing quality, compliance and supply agility. Raw materials, chemicals and reagents are sourced from Asian markets such as China and higher value processing equipment and specialised raw materials from North America, other parts of the UK and Ireland, and mainland Europe.

An average of 86% of North East pharmaceutical production is exported with 64% of finished products going to the United States.



The sector is growing and expecting to recruit additional jobs to its current manufacturing and research workforce in the coming years.

Many of the businesses operate an outsourced logistics model with logistics providers based in the region, through the strong air and sea links from North East transport gateways.

Key locations

The North East is an excellent location for medicines manufacturers who are based around the region taking advantage of established facilities and developing sites - you can see on the map on page five.

There are a number of key sites and facilities which are being developed offering opportunities for supported investment or clustering.

North East Enterprise Zone and Accelerated Development Zone

Sites around the region have been selected since April 2012 to support economic growth by providing tax breaks and a range of interventions to help businesses start up grow and expand. Additional sites went live in April 2016. Collectively, the North East Enterprise Zone is made up of 21 sites. The Newcastle-Gateshead Accelerated Development Zone makes a similar offer in the urban core of the region focused across five sites including Newcastle Helix.

In the spotlight

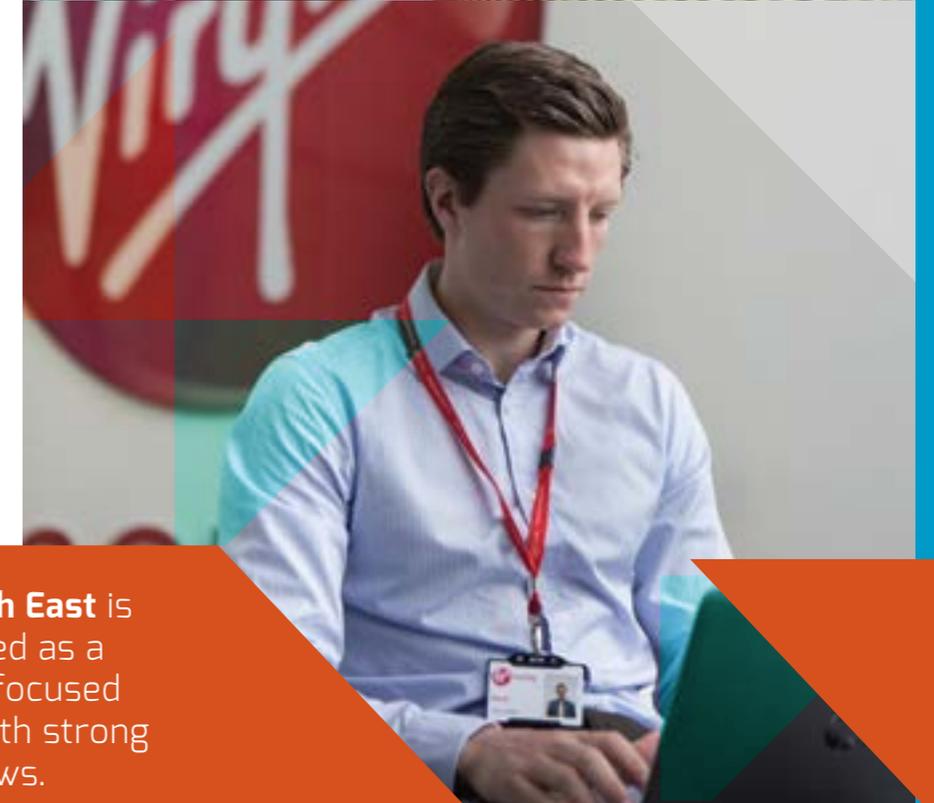
Accord Healthcare

In January 2018, Accord Healthcare opened its new 22 acre site in Fawdon Newcastle, taking over a site previously owned by Sanofi.

An initial staff of 60 will grow to a full complement of 500 jobs over the coming years through investment into a five year growth strategy focused on high tech pharmaceutical manufacturing.

The Fawdon site will be Accord's first facility producing generic effervescent medicines, and become its regional centre for excellence for effervescent tablets and other types of medicine.

It will export to over 35 countries across Europe and beyond.



The North East is recognised as a globally focused region with strong trade flows.

A vibrant and effective innovation environment

The North East is home to a cluster of businesses, addressing the global challenges of the health and life sciences sector. These are engaged businesses which are supported by a strong community of innovation and cluster networks, detailed below.

The National Institute for Health Research North East and North Cumbria Clinical Research Network

This Network is the best performing local Clinical Research Network in the UK and provides access to clinical trials for NHS patients across all disease areas and care delivery settings. It is hosted by The Newcastle upon Tyne Hospitals NHS Foundation Trust, which is the UK's leading Trust for research delivery of clinical trials and a Pfizer INSPIRE global partner. nih.ac.uk

MedConNect North

MedConNect North supports access to all aspects of the North East NHS in the region offering a bespoke service to SMEs, national and international medical technology companies seeking to navigate the medical technology research and innovation pathway. It also supports NHS staff to encourage, drive and develop innovation within their organisation medconnectnorth.com

FUSE (The Centre For Translational Research In Public Health)

The centre is a formal collaboration between public health researchers across the universities in the North East of England and aims to translate public health research into public policy and practice. fuse.ac.uk

First for Pharma

First for Pharma brings together representatives of some of the world's largest pharmaceutical and biologics manufacturing businesses alongside smaller organisations in the fields of manufacturing, medical devices, assistive technology and health informatics. It aims to support the regional pharmaceutical manufacturing ecosystem. firstforpharma.co.uk

The North East Process Industry Cluster (NEPIC)

NEPIC is an award winning membership cluster organisation working with chemical using industries in the North East of England. It covers a broad sweep of chemistry focused industries including petrochemicals, polymers and materials, fine and speciality chemicals, pharmaceuticals, biotechnology and renewables to build on the region's powerful industrial base. nepic.co.uk

BioNow

BioNow supports business growth, competitiveness and innovation within the biomedical and life sciences sectors across Northern England. It provides membership services to add value and cost efficiency to scientific, clinical and business operations within early stage and growth-oriented firms. bionow.co.uk

The Northern Health Science Alliance

The Alliance brings together the North health sciences cluster from Liverpool to Newcastle and has delegated authority across eight NHS Trusts, including Newcastle upon Tyne Hospitals NHS Foundation Trust, eight universities, including Durham and Newcastle, and four Academic Health Science Networks to enter into industry research partnerships, across our whole Northern geography. thenhsa.co.uk

The Innovation Supernetwork

The Supernetwork supports innovation delivery by bringing together a cross sector of networks and organisations to enable and facilitate business to business collaboration and promote links between business and research bodies, catapults and innovation hubs. supernetwork.org.uk

National innovation agencies

UK innovation agencies are actively engaged in the North East, working closely with the North East LEP and regional partners. Innovate UK were founding members of the North East innovation board, The Knowledge Transfer Network supports Venturefest North East and the Innovation Supernetwork.

Catapult centres are a network of world-leading centres designed to transform the UK's capability for innovation in specific areas and help drive future economic growth. There are currently 10 national catapults and six have established centres of different scales and roles in the North East, collaborating with the local innovation community. The two highlighted below are active in the North East Life Sciences sector. They are:

- The Centre for Process Innovation (CPI), part of High Value Manufacturing Catapult
- The North East and Tees Valley Digital Catapult Centre, based at Sunderland Software City.

The North East Health and Life Sciences sector worked closely with the Cell & Gene Therapy Catapult to deliver new curative advanced therapies in the NHS. The award to the Newcastle upon Tyne Hospitals NHS Foundation Trust of a £9m partnership with industry will provide clinical infrastructure that will deliver these ground breaking new therapies to patients in the North.

In March 2018, the Government announced an investment of £9million into the Northern Alliance Advanced Therapies Treatment Centre (NAATTC) is a partnership between a dozen therapeutic and supply chain companies and eight healthcare providers in Leeds, Newcastle, Edinburgh and Glasgow that will deliver these therapies to the 15m population that the NHS covers in the North East, Yorkshire and Scotland. The NAATTC is part of a national programme with two other ATTCs to act as pathfinders for adoption of these therapies to benefit NHS patients across the UK.

In the spotlight

Centre for Process Innovation

CPI, part of UK's High Value Manufacturing Catapult, is a leading technology and innovation centre. CPI works with academia and industry to help translate research ideas into commercial products and processes across the healthcare sector.

Focus areas include key parts of the pharmaceutical and med tech value chain: From the development of novel therapies, diagnostics and medical devices to the design of drug formulations; digitally-enabled medicines manufacturing and smart packaging solutions. CPI can accelerate commercialisation by applying its innovation processes, expertise in access to finance and its technical capabilities in biotechnology, electronics & sensors, photonics, nanotechnologies, formulation and materials chemistry.



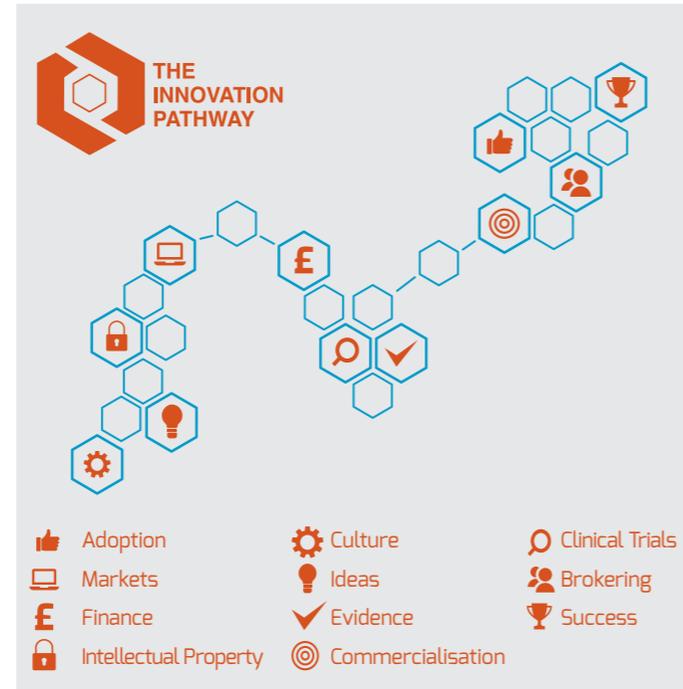
In the spotlight

Academic Health Science Network Innovation Pathway

The Academic Health Science Network North East and North Cumbria is one of 15 organisations in the National AHSN Network. AHSNs were established to deliver a step-change in the way the NHS identifies, develops, evaluates, adopts and spreads new technologies. The key emphasis is on partnership working and collaboration between the NHS, academia, the private sector, patients and public, third sector and other external partners, to:

- transform patient safety
- improve population health outcomes
- support economic growth across the North East and North Cumbria region.

The Innovation Pathway is the vehicle used to support companies through the innovation life cycle and ensures technologies are clinically evaluated with the express intention of adoption. This is further supported by the NHS Trusts in the North East of England who are recognised as early adopters of technology; the AHSN also has membership at Board level from NHS Trusts, Clinical Commissioning Groups (CCGs) and Universities within the region. Local company, Kromek (featured on page 8) benefitted from the services offered under the Innovation Pathway.



Since the inception of the AHSN we have supported more than 300 companies and created 60 jobs, as well as **securing over £4.5 million of additional investment.**

Research and innovation sites

Across the region, there are key locations which support the development of health and life sciences and provide competitive locations for investment.

These include:

- Internationally recognised science parks and research campuses hosting innovation hubs, research centres and laboratories.
- Industrial sites which are designated to support ongoing cluster development
- Leading public sector health organisations with a UK leading research pedigree.

NETPark – the North East Technology Park

Located at Sedgefield in County Durham, NETPark offers a range of offices and laboratories and hosts a number of innovative businesses. It is an internationally recognised location for science and technology companies. This includes the National Innovation Centres led by CPI, including National Printable Electronics Centre, National Formulation Centre and National Centre for Healthcare Photonics.

In the spotlight

Newcastle Helix (Science Central)

Newcastle Helix is the UK's biggest urban development outside of London, bringing together industry leaders, businesses and top researchers in an innovation community. It combines prestigious commercial and residential space with first class research and education facilities in the heart of Newcastle. It is a centre for science, innovation and business growth with a broad range of commercial, research and laboratory facilities. It is home to a National Innovation Centre for Ageing and Data, the Core (where knowledge-based science and technology SMEs are based) and Newcastle University's award-winning Urban Sciences Building. The aim of the development is to become a major UK hub for scientific research, and technology businesses, creating knowledge-based jobs for future generations.

The Biosphere

The new 90,000 sq. ft purpose-built £25m facility is tailored to the commercialisation of life science and innovation, research and development. It offers high quality biology and chemistry laboratories, Grade A offices and conference space. Within walking distance of Newcastle University, Newcastle Hospitals NHS Foundation Trust and National Innovation Centres this unique facility provides a global base for North East spin-out businesses and inward investors.



A broad and high-quality education offer

The North East has a broad and high quality education offer including four Universities, nine further education colleges and around 1, 300 primary, secondary and other schools.

Ensuring that the education system is effective and drives the skills the regional economy needs is a key priority for the Strategic Economic Plan. The North East LEP is working to facilitate a number of system-wide skills activities; including a focus on STEM education.

Higher Education

The North East has more than 82,000 higher education students, with almost half studying STEM subjects. Subjects aligned to health and life sciences account for the largest proportion of STEM students.

Durham University ranks in the top 100 global universities, complemented further by its chemistry department being ranked third in the UK for teaching in the Complete University Guide 2018, reflecting the departments long term and continued commitment to teaching and student experience.

Newcastle University has a world renowned medical school ranking amongst the top 100 global universities for life sciences and medicine in the 2016 Quacquarelli Symonds World University rankings. It was ranked ninth for medicine in the Complete University Guide 2018.

The faculty of health and life sciences at Northumbria University works closely with employers across an extensive portfolio of subjects including biology, biomedical sciences, chemistry, forensic science, food and nutritional sciences and applied health professions.

Further Education

The North East is currently the only region in England, where all further education (FE) colleges are rated either good or outstanding. Additionally there is a wide range of private provision offering additional specialised courses. The FE sector is vibrant, closely connected with regional employers and with a range of technical education and qualifications focussing on key employment sectors in the North East. The apprenticeship reforms and proposed technical education reforms offer further opportunities for employers to work closely with the FE sector.



In the spotlight

Working in a world-class centre for research: Anthony Lagnado, Newcastle University PHD student

Anthony Lagnado grew up in the South of France and today he is completing a PhD at Newcastle University's Institute for Ageing, studying the changes that take place within our cells as we age.

After studying for his first degree in the South of France, followed by Master's degrees in Montpellier and Grenoble, Anthony worked as a marketing manager within the science sector in Paris before making the move to North East England in 2013.

"I came to the North East of England because of the reputation of Newcastle, notably the University and its Centre for Ageing," said Anthony.

"After my Master's degrees I was looking for a PHD and for that I applied to many different places. I was most interested in Newcastle because it's one of the best institutes in the world. The main hub for research into the biology of ageing is here and the equipment we have is some of the best.

"We have connections and collaborations with other centres for research in the USA and Europe and Newcastle is one of the biggest centres for this research in the world.

"In addition, the cost of living is not very expensive here and I have explored the coast, the city and the quayside as well as visiting Scotland – in fact I'm in training for the Edinburgh marathon.

"When you take into consideration the cost of living, the research facilities and the area as a whole, it's one of the best places to be."

A mature and accessible business support ecosystem

In addition to the work of specialist life sciences network and cluster organisations, the North East offers a mature business support eco-system which is accessible to businesses in all parts of the economy, with dedicated scaleup support for those that have the potential to grow rapidly.

The North East Growth Hub

The Growth Hub provides targeted access to business support and finance to people wanting to start, grow or improve a business. The Growth Hub provides access to over 220 sources of business advice and support from across the region and from UK programmes.

northeastgrowthhub.co.uk

Scaleup North East

Launched in January 2018, Scaleup North East aims to increase the density of North East scaleup businesses, by supporting existing scaleups to continue to grow and by supporting businesses with scaleup potential to realise scaleup levels of performance.

The support is flexible and tailored to the needs of the business. Scaleup partners, who have a track record in scaling businesses, work with businesses to define growth objectives and mentor business leaders to take the right action at the right time.

scaleupnortheast.co.uk

The North East Fund

The North East Fund launched in 2018, a suite of five loan, equity and mezzanine funds specifically created to provide finance for North East SMEs.

Over a period of five years, the £120 fund will invest in over 600 businesses, creating jobs, securing further private sector investment, generating economic growth and creating future legacy funds.

The Fund's stakeholders include the European Regional Development Fund, the European Investment Bank and the existing regional legacy funds, managed by North East Access to Finance.

Locally based Fund Managers (FCA approved fund management companies) will manage the five funds, all of which have a different focus and remit on behalf of The North East Fund Limited.

northeastfund.org

In the spotlight

Glythera

Glythera is a drug development company specialising in the development of stable, safer and superior Antibody Drug Conjugates (ADCs) for the treatment of difficult to treat solid tumours. From its bases in Newcastle upon Tyne and Boston, MA, it has four ADCs in pre-clinical development and anticipates these entering the clinic by 2021. Glythera is focused on improving the lives of patients living with cancer. Glythera's new state-of-the-art facility will be at Newcastle's Helix development. It will be home to PhD-trained scientists including chemists and biologists working across candidate discovery, development and the pre-clinical assessment of its lead ADC candidates. Glythera works closely from its Newcastle Headquarters with its national and international partners within the life sciences sector.

Dr David Simpson, Chief Executive Officer of Glythera said: "The North East region has a particularly strong health and life sciences sector and supports a large number of intermediaries, many with well-developed industrial capabilities. We're able to make, develop and trial our products all within one small area which makes the North East a very economical place to do business. There is a huge amount of expertise and knowledge in the region as well as a talented pool of graduates and PhD students from the local universities. There's also a fantastic quality of life on offer, which makes the North East a great place to live as well as work."



Invest North East England

Acting as a single point of contact, Invest North East England (INEE) is the North East Combined Authority's strategic inward investment body.

INEE works closely with the North East Local Enterprise Partnership, local authorities and also has access to an extensive partnership network of support agencies, sector specialists, universities, colleges, knowledge networks and business organisations throughout the North East of England region.

investnortheastengland.co.uk

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Find out more

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North East
Local Enterprise Partnership

