

Medical Technologies

Proposition

January 2021



Department for
International Trade



The UK offers an advanced, well-connected ecosystem of world-leading companies, clusters, research institutions, networks and associations.

Contents

Executive Summary	03
Definitions of Key Terms	04
Key Diseases	05
05	
The MedTech Market	07
Why Invest in the UK?	12
Opportunities	17
17	
Supporting the Business Environment	24
The MedTech Landscape	33
FDI Case Study Successes	
38	
Regional Strengths	41
Additional Propositions of Interest	54
DIT Support for Investors	56



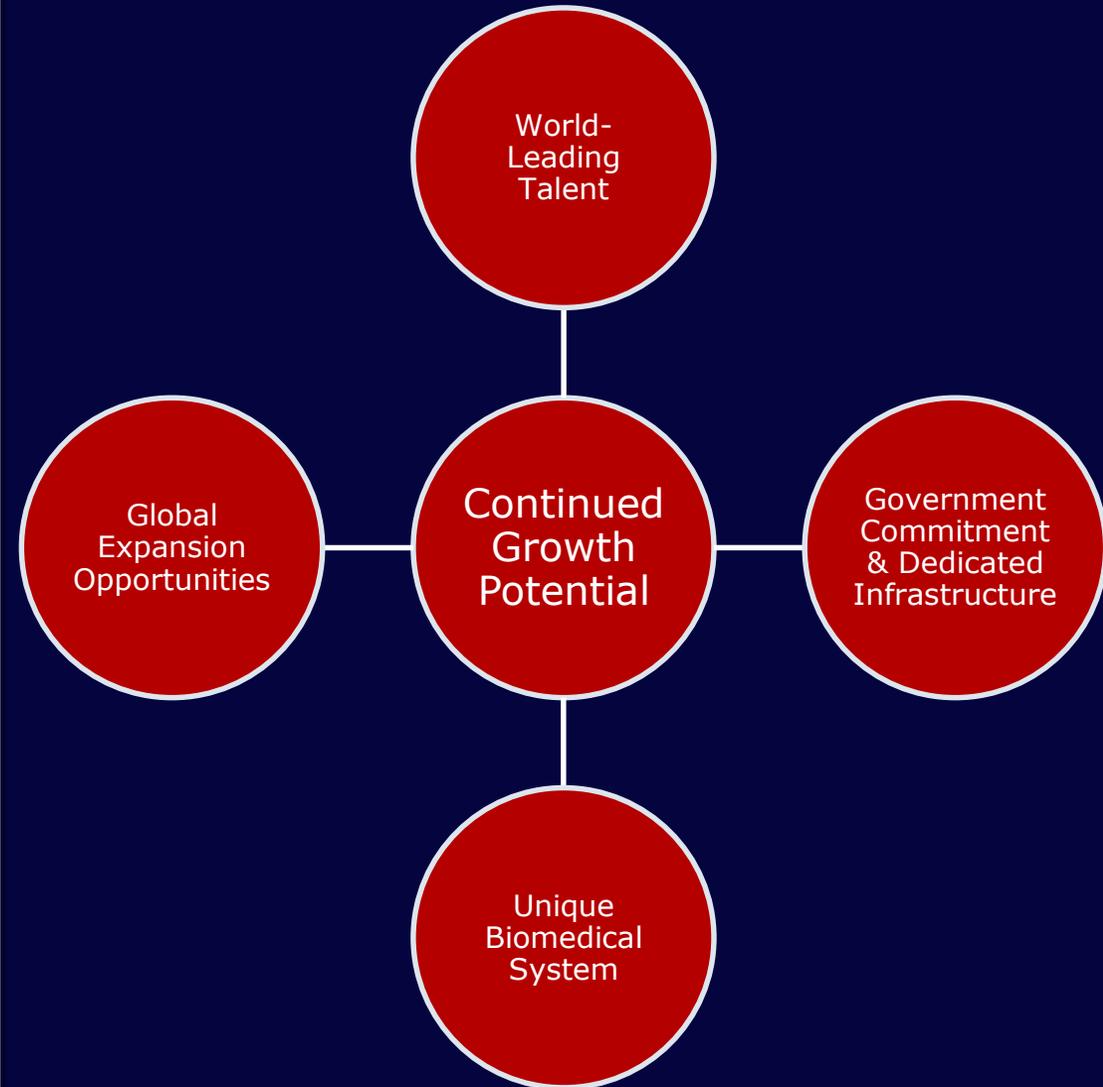
Executive Summary

Given its strength in the MedTech industry, the UK is a leading destination for foreign investment.

The UK offers prime investment opportunities for MedTech companies looking to expand.

This proposition focuses on the opportunities in life sciences to attract investors interested in medical devices, software related medical devices, diagnostics and genomics innovations. With ongoing research and a range of breakthroughs, investors can be sure they will be part of a dynamic and innovative environment focused on improving the lives of the community.

- › The UK is home to a significant commercial sector – one of the largest medical technologies industries in the world.
- › The UK leads the world in its research capabilities with world-class universities that consistently attract global talent, building on an existing rich history of ground-breaking medical innovations.
- › Firms have access to an expansive pool of data and dedicated infrastructure to support the development of their products.
- › Investors can take advantage of a unique and collaborative biomedical system with the NHS at its core, also offering a clear route to sell directly to it through the NHS Supply Chain.
- › The UK is one of the most attractive places in Europe with access to a low-cost competitive environment and significant tax relief.
- › The UK is a global MedTech hub, providing companies with opportunities to grow internationally through its well-established global connections and strong record of FDI and MedTech exports.



Key Terms

Definitions have been provided for some terms that are relevant for this proposition.

Life Sciences – ranging from basic and applied bioscience and biomedical research to the development of pharmaceuticals, biotechnologies, and medical and health technologies.

Medical Technologies are an umbrella term for medical devices, diagnostics and software. They can be familiar, everyday products such as blood glucose meters, sticking plasters, syringes or latex gloves. They can also be at the high-tech end of the scale, where medical technology includes molecular diagnostics, total body scanners, ultrasounds, life-supporting machines, implantable devices such as heart valves and pacemakers, neurostimulators and replacement joints for knees and hips.

Medical Devices – medical devices are any technology designed, manufactured and used to diagnose, monitor and treat diseases and conditions to save lives or improve the health of individuals, and which does not achieve its primary intended action in or on the human body by pharmacological, immunological or metabolic means, but which may be assisted in its intended function by such means.

Diagnostic process – the method by which health professionals select one disease over another, identifying one as the most likely cause of a person's symptoms.

In vivo diagnostics – 'in vivo' ('in living thing') diagnostics, or diagnostic imaging, involves observing and testing tissue and function in a living organism using imaging and scanning techniques. This includes x-rays, magnetic resonance, computed tomography, electrocardiography, etc.

In vitro diagnostics (IVDs) – 'in vitro' ('in glass') involves the removal of samples of tissue such as blood, saliva, biopsy samples from a living organism for examination in the laboratory setting or at the point-of-care setting.

Genomics – genomics is the study of the body's genes, their functions and their influence on the growth, development and working of the body – using a variety of techniques to look at the body's DNA and associated compounds. Genomics is sometimes considered the entry point for other lines of study (other 'omics'), including proteomics, transcriptomics and metabolomics.

Point of Care (POC) – POC testing is medical diagnostic testing at or near the patient's point of care, in contrast to testing completed in a medical laboratory away from the patient.

Precision Medicine – precision medicine is an emerging approach for disease treatment and prevention that considers individual variability in genes, environment, and lifestyle for each person.

Medical Software – Software intended for one or more medical purposes that can be used on its own or with medical devices.



Key Diseases in the UK

Cancer	Almost 300,000 people are diagnosed with cancer each year in the UK, and the disease is responsible for more than a quarter of all deaths. While there are more than 200 different types of cancer, the four most common types are breast cancer, lung cancer, prostate cancer and bowel cancer. According to the UK Clinical Research Collaboration, the 2018 expenditure on cancer and neoplasms research was £483 million, with almost half coming from Cancer Research UK.
Chronic Obstructive Pulmonary Disease (COPD)	COPD is the name for a group of lung conditions that cause breathing difficulties and includes emphysema and chronic bronchitis. Over 1 million people suffer from COPD in the UK, and every year another 115,000 people are diagnosed.
SARS-CoV-2	Since late 2019, the coronavirus SARS-CoV-2 (also known as COVID-19) has spread across the globe, infecting millions and causing symptoms ranging from asymptomatic or mild to severe. According to the latest figures, the UK has had more than 3.4 million confirmed cases and 89,261 deaths*. New confirmed cases continue to rise driven by a new variant of the disease.
Cardiovascular Disease (CVD)	Cardiovascular disease refers to conditions affecting the heart or blood vessels. In 2018, over a quarter million people in the UK died from CVD, making it the main causes of death as well as one of the main causes of disability in the UK. However, it can often largely be prevented by leading a healthy lifestyle. £156 million was spent on cardiovascular research through public investments in 2018.
Coronary Heart Disease (CHD)	Coronary heart disease occurs when the flow of oxygen-rich blood to the heart muscle is blocked or reduced. This puts an increased strain on the heart, and can lead to angina, heart attacks or heart failure. In the UK, cardiovascular disease is responsible for more than 25% of deaths of people aged 65 or over.
Stroke	A stroke is where the blood supply to part of the brain is cut off, which can cause brain damage and possibly death. 74% of strokes occur in people aged 65 and over. In 2018, NIHR provided £3 million towards research investigating screening using electrocardiograms to detect undiagnosed atrial fibrillation, a heart condition responsible for one in ten strokes.

For more information on other major diseases in the UK, click [here](#).

Acronyms Guide

<u>AAC</u>	Accelerated Access Collaborative
<u>ABHI</u>	Association of British Healthcare Industries
<u>AHSN</u>	Academic Health Sciences Network
<u>AMRC</u>	Association of Medical Research Charities
<u>BIA</u>	BioIndustry Association
<u>BIVDA</u>	British In-Vitro Diagnostics Association
<u>BSI</u>	British Standards Institute
<u>CPRD</u>	Clinical Practice Research Datalink
<u>CRN</u>	Clinical Research Network
<u>DHSC</u>	Department of Health and Social Care
<u>HDR UK</u>	Health Data Research UK
<u>MHRA</u>	Medicines and Healthcare Products Regulatory Agency
<u>MIC</u>	MedTech and In-vitro diagnostics Cooperative
<u>NHS</u>	National Health Services
<u>NICE</u>	National Institute for Health and Care Excellence
<u>NIHR</u>	National Institute for Health Research
<u>NJR</u>	National Joint Registry
<u>UKRI</u>	UK Research and Innovation



The MedTech Market

The UK enjoys a leading position in the global market for Medical Technologies.



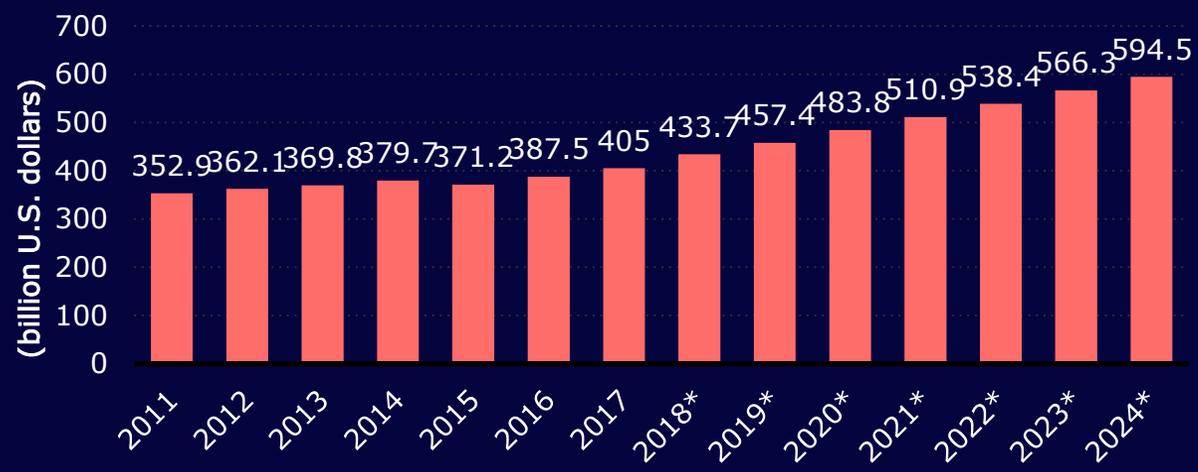
A Look at the Global Industry

Global Market Size and Growth

\$425.5 bn The value of the global Medical Technologies market is **estimated at US \$425.5bn in 2018** and is expected to reach **US \$612.7bn by 2025**.

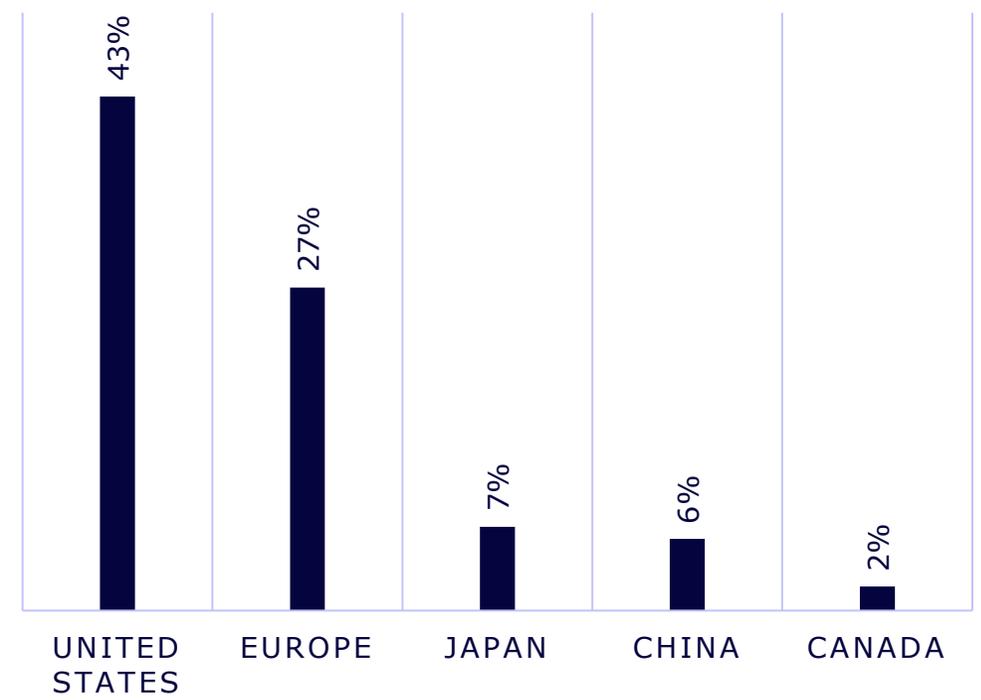
The market is expected to grow at a **CAGR of 5.4%** between 2018 and 2025.

Total global medical technology revenue, 2011-2024 (in billion U.S. dollars)



Sources: Fortune Business Insights, 'Medical Devices Market', April 2019; EvaluateMedTech – World Preview 2018; Statista, 'Total global medical technology revenue from 2011 to 2024,' 2018; MedTech Europe, 'The European Medical Technology Industry in figures,' 2019.

The Market's Major Players



The above figure represents the World Medical Device Market Share based on manufacturer prices in 2017. As a region, the fastest growing market is Asia-Pacific.

Other major market players: 13%
* Forecast

The European Market and Key Trends

European Market Facts & Figures

- > The European MedTech market was valued at **around €120bn** in 2018, making up an estimated 27% of the world market.
- > Europe had a **positive medical technology* trade balance of €11.7bn** in 2018. The biggest trade partners are the US, China, Japan and Mexico.
- > There are an estimated **32,000 MedTech companies** in Europe, 95% of which are SMEs.
- > **In Vitro Diagnostics** is both the largest and one of the fastest growing segments within MedTech. Cardiology is the second largest segment with diagnostic imaging coming in third.
- > **Germany, France, the UK, Italy and Spain** lead Europe's medical devices market. The same five countries lead the IVD market in Europe.

Sources: MedTech Europe, 'The European Medical Technology Industry in figures,' 2020; World Economic Forum, 'This is the biggest challenge to our health,' Dec 2017; PwC, 'Chronic diseases and conditions are on the rise', 2017; United Nations, 'World Population Prospects', 2019; Fortune Business Insights, 'In vitro Diagnostics (IVD) Market', 2018.

Major Trends Impacting the Global Industry

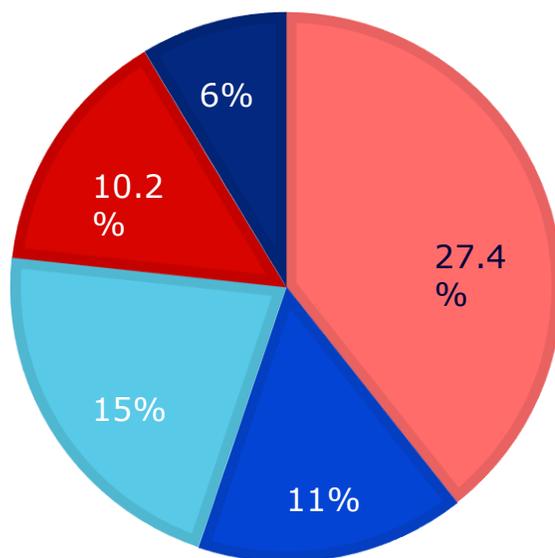
- > **An Ageing Society-** By 2050, one in six people in the world will be over age 65 (16%), up from one in 11 in 2019 (9%), and the number of persons aged 80 years or over is projected to triple, from 143m in 2019 to 426m.
- > **Rise in Multiple Chronic Conditions-** The World Health Organisation has warned against the rise in chronic conditions and those living with multiple conditions as sedentary lifestyles spread from the developed world to emerging economies. It expects that they will be 57% of the global burden of disease in 2020, compared to 46% in 2001.
- > **Growing Concern over Future Epidemics-** Rising health concerns over recent pandemics, such as Ebola, H1N1 and particularly COVID-19, is driving greater demand for health services across the globe.
- > **Technological Advancements-** Advancements in medical technology boost people's health and wellbeing and the economy, leading to investment opportunities, job growth and greater demand.
- > **Growing Demand in Emerging Markets-** Emerging economies, especially BRIC and others in the Asia Pacific, are increasingly adopting technological advancements as their middle class grows. **The growing prevalence of chronic conditions in their populations is also driving demand.**

* Trade section does not include In Vitro diagnostics in the figures for medical technology.

The UK Competes Globally

Europe's Major Players

Germany UK France Italy Spain



The above figures represent the European medical device market by country, based on manufacturer prices, 2017. The same markets form the top 5 IVD markets in Europe.

Other major market players: 30.3%

Sources: MedTech Europe, 'The European Medical Technology Industry in figures,' 2019; KPMG, 'Corporate tax rates table' 2020; The World Bank, 'Doing Business', 2020; Office for Life Sciences, 'Life Science Competitiveness Indicators', 2019; Forbes, 'Best Countries for Business', 2020.

UK Competitiveness

Life Sciences is a highly competitive sector. Countries work hard to promote their offer in order to attract foreign investment.

In 2019, the UK ranked **1st** for the number of life sciences FDI projects among European comparator projects and **2nd** globally, behind the US. The value of the overall inward FDI reached **£1.1 billion** in capital expenditure that year – a 37% increase from 2017 levels and the highest in the previous 8 years.

Country	Corporate Tax Rate	EODB* Ranking	Forbes** Ranking
UK	19%	No. 8	No. 1
USA	27%	No. 6	No. 17
Germany	30%	No. 22	No. 14
France	28%	No. 32	No. 21
Japan	30.6%	No. 29	No. 19
China	25%	No. 31	No. 49
Italy	24%	No. 58	No. 30

*EODB – Ease of Doing Business

**Forbes – Best Countries for Business List

A Look at the UK Life Sciences & MedTech Sector

UK Industry Overview

- > MedTech contributes **£25.6 billion** to the UK's annual Life Sciences sector turnover of over £70 billion.

- > In 2018, the total health research expenditure was **£2.56 billion** and included **18,307 awards**.

- > The UK is ranked **4th in world for MedTech employment**.

- > With 131,800 employees, **MedTech is the largest employer (51%) in the UK's Life Sciences sector**

- > **Employment has grown 11% since 2010**

- > There are **4060 MedTech companies** in the UK which represents **2/3rd of all UK Life Sciences companies**.

- > Around **80% of MedTech companies** are SMEs.

- > UK HealthTech investment has **doubled** since 2017, reaching **£1.7 billion** in 2019.

- > **In vitro diagnostics** is the largest segment by turnover.

- > The UK has Europe's **3rd largest MedTech market**, and also ranks in the **top 5** for the IVD market.

Why Invest in the UK?

The UK has world-leading talent and research capability within a supportive and cost-competitive environment.



Be Part of a World-Leading Research Ecosystem

1959

- The first commercial spin-off company from the University of Oxford was founded to manufacture superconducting magnets for scientific research.

1962

- Francis Crick and James Watson share the Nobel Prize for Physiology and Medicine for discovering the double helix structure of DNA

1999

- National Institute for Health and Care Excellence is formed to assess new medicine, therapies and procedures for use in the NHS.

2003

- Sir Peter Mansfield (University of Nottingham) and Paul Lauterbur were awarded the Nobel Prize for their research in magnetic resonance imaging (MRI) in the 1970s.

2020

- Rosalind Franklin Institute opens, home to world-leading interdisciplinary medical research.

A Proven Record of Leading Talent

Tap into world-class science and a growing pool of talent, with leading global universities, expert research and data infrastructure, and nearly 250,000 people working in the life sciences industry.

The UK is home to 57 universities offering 168 undergraduate courses in medicine and 201 postgraduate courses for Medical Technology. More than 70 UK universities are ranked among the world's best in the QS World University Rankings, and 41 UK universities are ranked among the world's top for medicine. As a result, a steady stream of highly skilled graduates joins the medical technology industry each year.

The industry is quickly evolving to incorporate new technological advancements. It therefore increasingly draws on a variety of multidisciplinary skills across STEM subjects. In 2019, STEM graduates in the UK numbered over 220,000. These graduates have skills across a range of subjects, including bioengineering, physics, computer science, genetics, molecular biology, chemistry and radiology, amongst others. Moreover, to foster continued interest and engagement with STEM subjects for the next generation, national initiatives, like the [National STEM Learning Centre](#), have been working with government, industry and academia to raise young people's achievement in STEM.

The UK also ranks second in the world for medical research – behind only the US – with high numbers of published papers and journal citations, offering new ideas, research and knowledge to the field.

Tap Into Open Access Data to Support R&D

Open Access Data

The UK serves as a test bed for global market development. Through access to public data, alongside the UK's science parks, research facilities, universities and other institutions, companies can lead with cutting-edge research and development of the next generation of medical technologies. Fees to access and license datasets are primarily priced on a cost-recovery basis and adapted to reflect individual vs. multi-study R&D projects.

Clinical Practice Research Datalink (CPRD) is a governmental, not-for-profit research service jointly funded by NIHR and Medicines and Healthcare Regulatory Agency (MHRA). It supports both retrospective and prospective public health and research studies by providing access to anonymised patient data from the NHS.

The NHS data is longitudinal, with comprehensive data collection over a long period of time, and encompasses over 50 million patients. CPRD has been providing anonymised primary care records for public health research for 30 years, resulting in over 2,500 peer-reviewed publications.

Specialty Data

The National Joint Registry (NJR) collects information on hip, knee, ankle, elbow and shoulder joint replacement surgery and monitors the performance of joint replacement implants; it has data from over 2.8 million registered procedures. It produces an annual report that analyses the data submitted by NHS organisations across England, Wales, Northern Ireland, the Isle of Man and the States of Guernsey.

At CancerData, the NHS also provides information on all people living in England who are diagnosed with cancer to the National Cancer Registration and Analysis Service (NCRAS). NCRAS then quality assures and analyses it, creating a clinically rich data resource that is used to measure diagnosis, treatment and outcomes for patients diagnosed with cancer.

The UK's many leading health charities add to this already rich collection of data through patient data registries. The charities collect usually disease-specific data to supplement the information collected by the NHS. As a result, they lower some of the barriers to research and facilitate innovation to save lives.

Further Support

Additionally, Health Data Research Innovation Hubs are centres of excellence with expertise, tools, knowledge and ways of working to maximise the insights and innovations developed from the health data provided through industry collaborations.

The Medicines Discovery Catapult also supports companies in gaining access to the millions of samples and billions of data points collected from UK patients who have agreed that their samples and data can be used for research.

**The NHS open data
is valued at
£9.6 billion
per year.**

Take Advantage of the UK's Competitive Offer

NHS at the core of a collaborative network

The UK boasts a vast network of institutions and corporations working with the National Health Service to produce the next generation of health technologies. The UK's unique biomedical ecosystem brings together clinical and academic excellence with the infrastructure to support research development and innovation in the MedTech area.

These partnerships funnelled £4.8 billion of public investment in 2018 to deliver life-changing treatments and technologies that improve the lives of patients.

Partnerships with related emerging fields, such as digital health and artificial intelligence (AI), are also allowing the UK to compete globally.

Sources: UK Gov, 'Life Sciences Sector Deal 2', 2018; DIT, 'Global Sales Pitch', UK Clinical Research Collaboration, 'UK Health Research Analysis 2018.'

NHS Supply Chain

NHS Supply Chain manages the sourcing, delivery and supply of healthcare products, services and food for NHS trusts and healthcare organisations across England and Wales. NHS Supply Chain systems consolidate orders from over 800 suppliers, saving trusts time and money and removing duplication of overlapping contracts. Suppliers can benefit from lower sales and marketing costs, having a single route into the national market, a joined-up approach across the NHS and a clear route for innovative products.

Learn more about setting up in the UK and selling to the NHS [here](#).

A low-cost competitive market

The UK is the most attractive place in Europe for regional Headquarters, R&D, and Manufacturing and offers the lowest operating costs.

With connected clusters across the country, the UK offers a range of affordable locations alongside the lowest corporation tax rate in the G20 (19%).

Labour costs in the UK are also highly competitive, and for unit cost beat out most major European destinations as well as the leading US clusters. For example, it is half as expensive to hire your R&D talent in Oxford versus Boston or San Francisco.

Tax Relief to Support Innovation

To stay competitive, the UK offers different tax relief packages:

- › The Patent Box tax relief allows companies to apply a lower rate of 10% of corporate tax to profits earned from patented invention in the UK.
- › The Research and Development tax relief supports companies that work on innovative projects in science and technology.
- › The Research and Development expenditure credit to get tax relief on R&D costs.
- › The Research and Development Allowance (RDA) offers tax relief on capital expenditure on qualifying R&D activities.

Springboard for Global Opportunities

International Opportunities

The UK is a leading global hub for MedTech, acting as a launchpad to the rest of the world. Given that some of the key priorities of MedTechs include access to new customers, international expansion support and access to new investment, the UK's connections to international markets make it an ideal place for MedTech investors to grow their business. These connections extend the UK's market reach and drive innovation in a process that is inherently collaborative.

Export to the World from the UK

The UK has long been a promoter of free trade. Indeed every year, around £1.16 trillion of traded goods cross the UK border, making the UK the 6th largest trader in the world. Life sciences clusters across the UK are responsible for exports of £30bn a year. In 2019, MedTech contributed over £6.7bn in exports, demonstrating 20% growth from £5.6bn in 2015. In comparison, France's exports grew at 15% over the same time period.

Join Other Foreign Investors

As the top destination for foreign direct investment in Europe, the UK has developed strong connections with international investors and connected clusters, facilitating access to customers, collaborators, supply chains and innovation partners.

In 2019, the UK ranked 1st for the number of life sciences FDI projects (72 projects) among European comparator projects and 2nd globally, behind the USA. 12 FDI projects at US\$32.4m capex in the medical devices sector landed in the UK in 2019. The UK was also the source of 5 medical devices FDI projects at US\$21.5m in capex.



Leading global firms have strong foundations in the UK, including Siemens (Germany), GE Healthcare (USA), Braun Medical (Germany), Stryker (USA) and more.

Opportunities

Opportunities exist for investors and innovators to find and develop technology solutions to medical challenges.



Identifying Key Opportunities: Overview

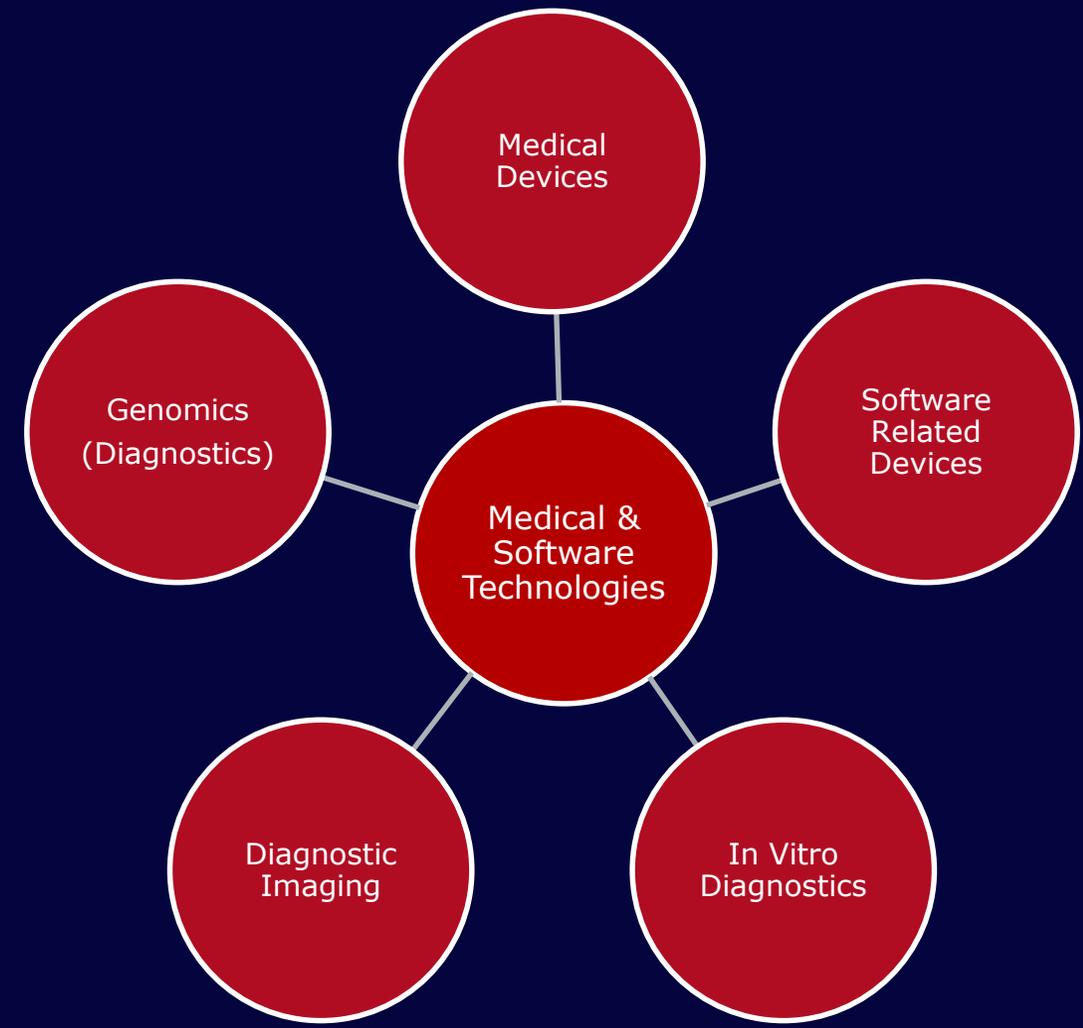
Overview

The global trends of an ageing population, increased prevalence of chronic conditions and rising concerns over current and future pandemics are mirrored in the UK. With millions of people affected by a range of diseases, high demand for medical devices will only continue. As a result, the MedTech industry is undergoing dynamic growth as healthcare systems search for innovative solutions to address disease and medical conditions. As scientific research propels new advances in science and technology, investment opportunities are emerging across the three segments of Medical Technology: Medical Devices, Software Related Devices and Diagnostics, which includes IVD, Diagnostic Imaging and Genomics.

The government is providing support in order to realise the goals outlined in the Industrial Strategy. It sets out several Grand Challenges, including artificial intelligence & data and an ageing society, with the aim of putting the UK at the forefront of the industries of the future. To that end, the government is investing billions into the life sciences and collaborating with the industry through sector deals. The industry also benefits from receiving more private money for R&D than any other industry.

Medical technology today is meeting the moment where the technologies are converging with the patient, software and doctor to optimise patient treatment

With new technologies providing increasingly innovative medical solutions, many opportunities exist to help people live better, healthier lives.



Developing Medical Devices to Meet Increased Demand

Overview

A medical device is any instrument, apparatus, appliance, software, implant, reagent, material or other article intended by the manufacturer to be used, alone or in combination, to benefit patients by helping to diagnose and treat them. It benefits patients by helping health care providers diagnose, monitor and treat them, thereby providing patients with more independence and an improved life.

Types of Devices

Medical devices cover a vast range of products and equipment; with over 10,000 types of devices, any small devices in hospital to large medical equipment counts. They include orthopaedics and prosthetics, implantable devices, wound management devices, assistive technology, cardiovascular devices, endoscopic devices, artificial joints, ventilators, stents, etc.

£626.3 million
UK turnover for
cardiovascular and
vascular devices in
2017.

New Innovations

Portable Heart Scanners

With 1.3 million patients admitted to UK emergency departments in 2020 from chest pain, a sizable burden is placed on hospitals. An effort to alleviate that burden and to help patients is led by researchers at the University of Leeds. Corsens (HQ in Israel) [portable heart scanner](#) would allow doctors to quickly assess the seriousness of chest pain by measuring the heart's electromagnetic signals. The spin-out company [Creavo Medical Technologies](#) has already raised £20 million on its path to commercialisation.

Minimally Invasive Procedures

The UroLift (HQ in USA) treatment is a revolutionary, minimally invasive approach to treating an enlarged prostate. In 2018, it was selected as [one of seven most transformative innovations](#) adopted by the NHS and was consequently fast-tracked by the [Accelerated Access Collaborative](#).

COVID-19 Ventilators

Founded in Oxford in 1943, [Penlon](#) produces a range of medical devices, including the emergency ventilators widely used in the current pandemic. As part of the [Ventilator Challenge UK](#), Penlon worked with significant UK industrial, technology and engineering businesses to manufacture over 14,000 units in three months, using a new design, along three existing models, that was rapidly approved and scaled up to meet domestic and global demand.

Incorporating Software to Optimise Healthcare Solutions

Medical Software in...

Medical devices have incorporated software to supplement diagnostics and treatment for many years, but the tech boom of the last two decades has meant a proliferation of technology platforms like computers and smartphones as well as increasing access to the internet and the cloud. These changes have made software for medical purposes practically ubiquitous, and new opportunities are myriad.

Referred to as medical device software, or just medical software, it can be incorporated into a medical device (i.e. embedded software), drive a device or influence the use of a device, or work in combination with one or more devices as an accessory. It can also be a stand-alone product with a medical purpose, often called Software as a Medical Device (SaMD). It is generally intended to influence the actual treatment, facilitate a diagnosis or prognosis, or provide active implantable functionality.

Sources: MHRA, 'Guidance: Medical device stand-alone software including apps (including IVDMDs),' June 2020; Becchetti, Claudio and Alessandro Neri, 'Medical Instrument Design and Development: From Requirements to Market Placements, Chapter 6 Medical Software,' May 2013; Deloitte, 'Reimagining Digital Health Regulation,' 2018.

■ In Vitro Diagnostics

IVD software comes in many forms: in hand-held personal IVDs, point-of-care or lab-based analysers, software upgrades, etc. A glucose meter is a widely used IVD software device that is able to test blood glucose levels and display it on a screen; this technology is a vital component in successfully managing diabetes.

■ Medical Devices

Software can be critical to a device's proper functioning. The pacemaker, for example, sends electrical impulses to the heart to imitate the sinus node and regulate the patient's heart beat; these impulses are managed by software embedded in the device.

■ Diagnostic Imaging

Software is also integral to diagnostic imaging. It is used throughout the MRI process: software helps select the imaging parameters, turn the machine's magnets, process and even analyse the images once taken. Digital radiography has also added to the imaging landscape, utilising digital sensors that capture images and quickly convert them to digital data for review.

■ Genomics

The study of genomics necessitates bioinformatics given the large data sets inherent in large-scale DNA sequencing. Today, software allows researchers and scientists to analyse the data in order to improve health outcomes and discover new medical breakthroughs.

■ Software as a Medical Device

SaMD is standalone software that can work on non-medical electronic devices as well as medical devices. It can determine proper drug dosages given personalised patient data or calculate the risk of melanoma by tracking the size and shape of moles.

Using In Vitro Devices for Diagnostics and Prevention

In Vitro Diagnostics

One key method of diagnostic testing involves the removal of tissue samples such as blood, saliva, biopsy samples from a living organism for examination in a laboratory setting. This diagnostic process is called in vitro diagnostics (IVDs). Effectively used, IVDs help to reduce hospital stays, support patients to look after their own health and release resources for use elsewhere in the NHS, resulting in a healthier population and stronger economic growth.

More recently, in vitro diagnostics are able to be carried out at home (for example through self-monitoring of blood glucose levels for diabetes) or at Point-of-Care (POC), offering rapid results and a potentially immediate impact on patient care.

In the COVID-19 pandemic, we have also seen the value of IVDs in diagnosing the disease through PCR testing and antibody tests. Over 40 companies with R&D and/or manufacturing that are developing and selling COVID-19 diagnostics have been identified; many are already exporting to overseas markets.

At the start of the pandemic, [Hologic, Inc.](#), a specialist screening and testing company, committed to a new multimillion pound expansion of its Manchester manufacturing facility in order to ramp up its production line. As a result, it is now able to deliver over a million COVID-19 tests a week while having created more than 40 jobs.

Early diagnostics are vital for prevention, detection and management of diseases and chronic conditions.

In Vitro Diagnostics shows the **highest turnover** by MedTech segment in the UK (2019).

~70% of clinical decisions are based on IVD tests.

900 million tests are carried out each year in the UK.



Diagnostic Imaging for Next Generation Healthcare

Diagnostic Imaging

Diagnostic Imaging, also known as in vivo diagnostics, involves observing and testing tissue and function in a living organism by forming images to observe the inside of a body. While there are many types of imaging and scanning, the best-known techniques include radiography (x-rays), ultrasound, computed tomography (CT), and magnet resonance imaging (MRI). Today, these techniques are critical to practically every medical diagnosis, providing myriad opportunities for new innovations.

Leading the way on precision medicine

Recent medical advancements are moving the sector towards greater usage of diagnostic imaging for screening, therapy and intervention as well as precision medicine. Imaging equipment is then used in conjunction with other medical diagnostics, such as genomics, informatics, data analytics and artificial intelligence, to form a more personalised treatment.

Radiology in particular is seen to present one of the biggest opportunities in precision medicine as clinical trials prove that AI is increasingly able to quickly and accurately spot lung cancer, skin cancer and numerous eye conditions from scans, outperforming even specialist doctors. Five diagnostic centres of excellence focused around AI were established as part of the government's Industrial Strategy Challenge Fund to unlock new healthcare solutions.

7.9% average profit margin for the Electromedical & Imaging Equipment Manufacturing industry in the UK.

The Electromedical & Imaging Equipment Manufacturing industry earned **£1.5bn** in revenue in 2019.

42.3 million imaging tests were reported in England between May 2019 and April 2020.

Sources: OLS, 'Biotechnology and Health Technology Sector Statistics 2019'. Statista, 'Global top 10 companies based on diagnostic imaging market share in 2017 and 2024', 2018; IBISWorld, 'Electromedical & Imaging Equipment Manufacturing in the UK', 2020; NHS, 'Diagnostic Imaging Dataset Statistical Release', 2020; Gallagher, James, 'NHS to set up national artificial intelligence lab,' 2019.



Genomics Leading to New Methods of Diagnosis

Overview

Genomics is a rapidly accelerating and dynamic sector. With rising government funding and growth in the number of genomics projects, lower sequencing costs as a result of technological advancements and expanding methods of application, the Genomics sector offers a tremendous opportunity for companies looking to invest in a variety of rapidly growing start-ups.

The UK has a history of cutting-edge research in the genomics field with its key involvement in the international Human Genome Project. Today, the UK continues its leadership role with the trailblazing Genomics England project, which was announced in 2014 alongside a more than £300 million investment package. The UK is consequently set to become the world leader in ground-breaking genetic research into cancer and rare diseases, transforming how diseases are diagnosed and treated. In November 2020, NHS England announced a world-first pilot to screen 140,000 participants for up to 50 types of cancer with GRAIL's ground-breaking blood test.

One of the key opportunities in the genomics field is personalised medicine, or precision medicine. Understanding individuals' genomes can be revolutionary in informing medical decisions, especially when combined with data and informatics and wearable technology.

Sources: UK Gov, 'Human genome: UK to become world number 1 in DNA testing', 2014; NHS, 'Personalised medicine', 2020; MarketsandMarkets, 'Genomics Market', 2018.

Companies

Illumina is delivering the government's Genomics England project. While receiving £78 million as part of the investment deal, the company is investing an additional £162 million, creating new knowledge and jobs in the field of genome sequencing.

Oxford Nanopore Technologies aims to make genome sequencing mobile and portable, offering real-time, out-of-the-lab DNA sequencing, as Nanopore's team has developed the world's first and only DNA sequencer. The device is in use by a thriving community of scientists in more than 50 countries, which for example made it possible to carry out offline DNA sequencing of environmental samples on Antarctica.

Established in 2005, the company has already secured £351 million in funding and established working partnerships with genetics researchers at other institutions, including Harvard, University of California Santa Cruz and Boston University. In August 2020, DHSC partnered with Oxford Nanopore to roll-out its new CE-marked LamPORE COVID-19 assay for the detection of SARS-CoV-2 which is offering scale, accuracy and efficiency for testing programs globally in complement of PCR tests.

Project Sapiens, now known as ZOE, is a start-up using machine learning to analyse sequences of your DNA and the DNA of your gut microbiome, before providing tailored nutritional advice based on your personal genomics. In a matter of months, it achieved a valuation of over £30 million.

The Genomics market is projected to reach **US \$35.7 billion by 2024**, growing at **13.5% CAGR**.

Supporting the Business Environment

The UK provides access to a supportive business environment through proactive government leadership.



Government Strategy and Programmes

UK Sector Goals

Life Sciences Industrial Strategy

The Life Sciences Industrial Strategy is the UK's plan to boost productivity, capitalise on the UK's existing competitive advantages in order to build on the collaborative environment between private industry and the public health system.

By outlining a set of detailed recommendations, it envisions a global hub for medical innovation and clinical research with four pillars at its core:



Science



Growth



NHS



Digital

The government and the Life Sciences sector have agreed to two Sector Deals – the only industry with two Deals under the Government's Industrial Strategy. Under them, nearly £3bn in joint investment will go to a range of research programmes, with focus on genomics; early diagnosis; advanced therapies; and digital health.

Publicly Funded Programmes

- > Genomics England was set up to deliver the 100,000 Genomes Project. It is mainly funded by the National Institute for Health Research and NHS England as well as by some of the largest charities in the UK. The project will sequence 100,000 whole genomes from NHS patients with rare diseases, and their families, as well as patients with common cancers. In 2018, Secretary of State for Health and Social Care Matt Hancock MP laid out an even more ambitious plan to sequence one million genomes by 2023.
- > UK BioBank is a national and international health resource with unparalleled research opportunities, open to all bona fide health researchers. It aims to improve the prevention, diagnosis and treatment of a wide range of serious and life-threatening illnesses by following the health and well-being of 500,000 volunteer participants. UK BioBank data can be accessed by about 10,000 registered researchers in close to 80 different countries, and it is making a major contribution to the global research effort on COVID-19.
- > The SAIL Data Bank, short for Secure Anonymised Information Linkage, is a world-class flagship for the robust, secure storage and use of anonymised person-based data about the population of Wales for research to improve health, well-being and services. The databank is home to the broadest and most accessible source of anonymised population data in the world and offers a secure environment to conduct research analysis.

A new £20m Medicines and Diagnostic Manufacturing Transformation Fund has been confirmed for launch mid-2021.

Government Strategy and Programmes

NHS Long-Term Plan

Launched in January 2019, the NHS Long Term Plan is a new plan to accelerate the redesign of patient care to future-proof the NHS for the decade ahead.

It aims to improve the quality of patient care and health outcomes and sets out how the £20.5 billion budget settlement for the NHS, announced by then Prime Minister Theresa May in summer 2018, will be spent over the following 5 years.

With thirteen areas of work, the 10-year plan will make sure the NHS is fit for the future. This bold vision will be implemented in cancer, cardiovascular disease, ageing well, digital transformation, prevention, stroke, respiratory disease and others. It includes measures to prevent 150,000 heart attacks, strokes and dementia cases.

Prevention

Digital Care

Fighting Inequalities

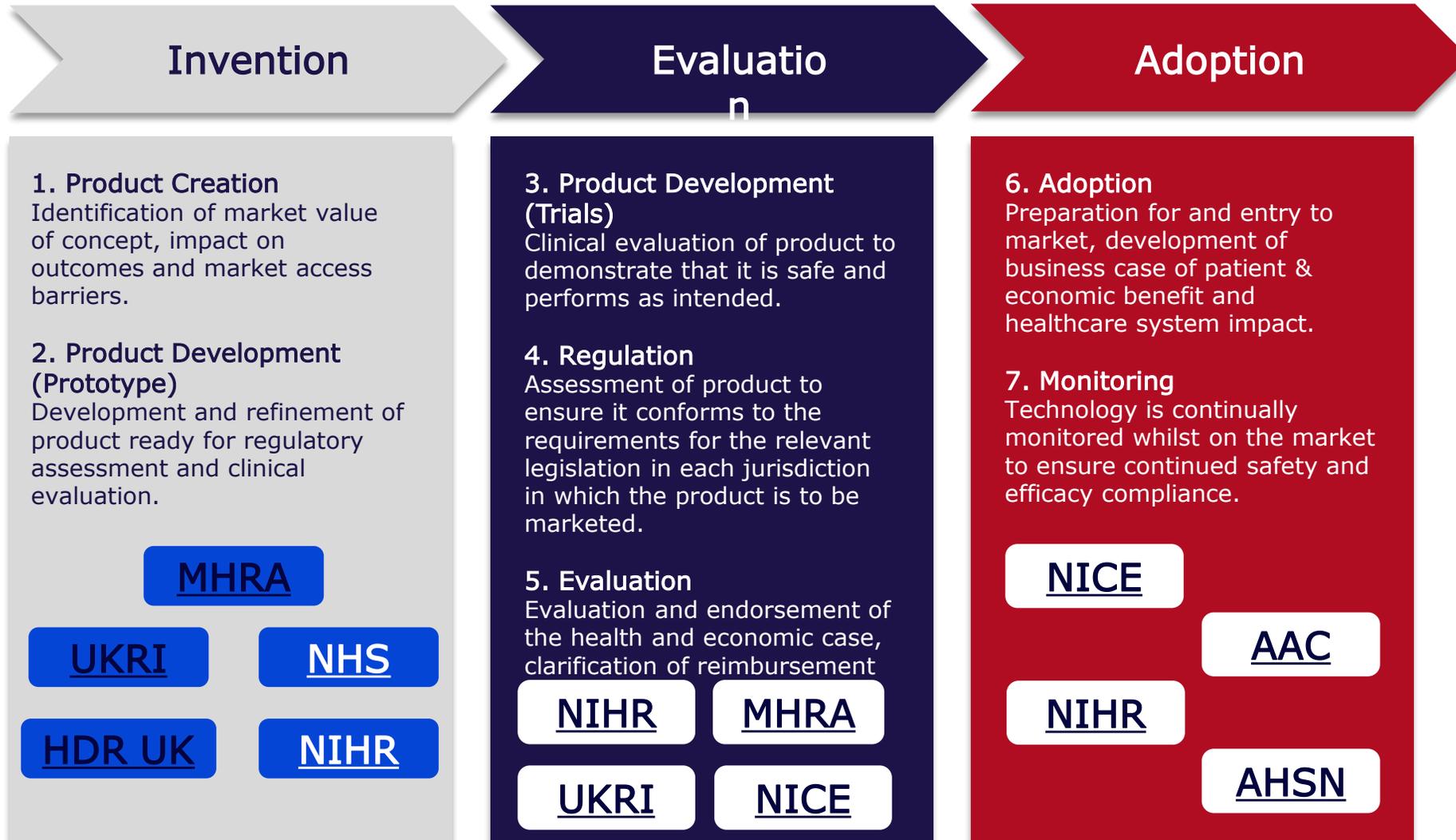
Technological
Upgrades

“

“Whether it’s treating ever more people in their communities, using the latest technology to tackle preventable diseases, or giving every baby the very best start in life, this government has given the NHS the multi-billion-pound investment needed to nurture and safeguard our nation’s health service for generations to come.”

Health and Social Care Secretary Matt Hancock
(January 2019)

Navigating the MedTech Innovation Pathway



The organisations included are the key public institutions involved at each step of the innovation pathway.

For more details about the MedTech Innovation Pathway, please see the [AHSN MedTech Landscape Review](#) and EPSRC's [Funding Landscape](#).

Public Institutions Supporting Innovation

Department of Health and Social Care (DHSC)

This ministerial department reports to the Secretary of State for Health and Social Care and sets strategy and direction. It is supported by 28 agencies and public bodies including the NHS.

UK Research and Innovation (UKRI)

- > With a budget over £7 billion, UKRI is a public body which supports multidisciplinary research, bringing together seven research councils. Moreover, UKRI will funnel £300 million of investment in world-class infrastructure, including scientific and research instrumentation, supercomputing facilities and digital infrastructure, data sets and longitudinal studies` :
- > Engineering and Physical Sciences Research Council (EPSRC) builds the knowledge and skills base needed to address scientific and technological challenges and provides a platform for future UK prosperity by contributing to a healthy, connected, resilient, productive nation.
- > Innovate UK is the national innovation agency. It works with people, companies and partner organisations to find and drive the science and technology innovations that will grow the UK economy. It established the Catapult centres, which are a network of world-leading technology centres designed to transform the UK's capability for innovation in specific areas, including Medicines Discovery (MCD) and Cell and Gene Therapy (CGT).
- > Medical Research Council (MRC) is at the forefront of scientific discovery to improve human health.

National Institute for Health Research (NIHR)

The NIHR is the nation's largest funder of health and care research and provides the people, facilities and technology that enable research to thrive. It works in partnership with medical device, digital technology and diagnostic companies to successfully translate innovative ideas into the clinical setting.

- > Invention for Innovation
The NIHR Invention for Innovation (i4i) Programme supports development of innovative healthcare technologies. Its Connect funding stream is specifically designed for SMEs in need of a funding boost to reach the next stage in the development pathway.
- > Clinical Research Network
The Clinical Research Network (CRN) is funded by the government and acts as the research delivery arm of the UK's National Health Service. It aims to provide a range of free services to help life science companies deliver clinical research in England.

199

In 2019/20, NIHR supported **199 MedTech studies** at various stages and helped recruit **8,591 participants** into those studies.

79

~~70~~ % of the MedTech studies that closed in that 12 month period achieved their recruitment target on time.

Supporting Centres of Excellence

MedTech and In-vitro diagnostics Cooperatives

The NIHR funds eleven MICs based in leading NHS organisations across the UK. They act as centres of expertise, bringing together patients, clinicians, researchers, commissioners and industry, to catalyse the development, evaluation, and adoption of medical technology into the NHS. The NIHR MICs launched on 1 January 2018, with more than £14 million awarded until 2022.

There are eight MICs which focus on MedTech and another four focused on In Vitro Diagnostics:

- › [NIHR Brain Injury MedTech Co-operative](#) (Cambridge)
- › [NIHR Cardiovascular MedTech Co-operative](#) (London)
- › [NIHR Children and Young People MedTech Co-operative](#) (Sheffield)
- › [NIHR Community Healthcare MedTech and In Vitro Diagnostics Co-operative](#) (Oxford)
- › [NIHR Devices for Dignity MedTech Co-operative](#) (Sheffield)
- › [NIHR Leeds In Vitro Diagnostics Co-operative](#) (Leeds)
- › [NIHR London In Vitro Diagnostics Co-operative](#) (London)
- › [NIHR Mental Health MedTech Co-operative](#) (Nottingham)
- › [NIHR Newcastle In Vitro Diagnostics Co-operative](#) (Newcastle)
- › [NIHR Surgical MedTech Co-operative](#) (Leeds)
- › [NIHR Trauma Management MedTech Co-operative](#) (Birmingham)

Sources: UK Gov, 'Artificial Intelligence to help save lives at five new technology centres,' Nov 2018; UK Gov, 'Funding boost for artificial intelligence in NHS to speed up diagnosis of deadly diseases,' Aug 2020.

Artificial Intelligence and Diagnostics Centres

To support the COVID-19 response and to scale-up existing research work, the government is investing an extra £50 million in diagnostic centres of excellence developing artificial intelligence to diagnose disease. These centres, first announced in 2018, will boost diagnostic capabilities, improve outcomes for millions of patients and free up NHS staff time. The funding will support our long-term response to COVID-19 as part of government commitment to detect three-quarters of cancers at an early stage by 2028. The centres are:

- › [Medical Imaging and Artificial Intelligence Centre for Value-Based Healthcare](#) (London)
- › [Industrial Centre for AI Research in Digital Diagnostics, I-CAIRD](#) (Glasgow)
- › [National Consortium of Intelligent Medical Imaging, NCIMI](#) (Oxford)
- › [Northern Pathology Imaging Collaborative, NPIC](#) (Leeds)
- › [Pathology image data Lake for Analytics, Knowledge and Education, PathLAKE](#) (Coventry)

Over £14 million has been awarded to the NIHR's **11 leading MedTech and In Vitro Diagnostics Co-operatives.**

Public Institutions as Data and Research Hubs

Health Data Research UK (HDR UK)

HDR UK is the [national institute for health data science](#). As an independent, non-profit organisation, it works to unite the UK's health data to enable discoveries that improve people's lives through access to large scale data and advanced analytics.

[HDR Innovation Hubs](#) are formal collaborations between NHS, academic organisations, patients, charities and industry – in all totalling over 100 organisations across the UK. They are set up to demonstrate and drive the utility of expert health data science, based on an area of expertise, and provide data, curate the data and offer services for research and innovation. To gain access to health data via the HDR Innovation Gateway, click [here](#).

HDR UK Health Data Research Hubs

The seven [Health Data Research Hubs](#) are centres of excellence that focus on curated, disease-focused datasets, clinical trials and real world evidence. They involve patients and the public in shaping the research activities and improve secure and responsible access to data. They are located across the UK, creating a network of expertise, tools, knowledge and ways of working to further facilitate innovation.

- > [BREATHE](#) – HDR Hub for Respiratory Health
- > [DATA-CAN](#) – HDR Hub for Cancer
- > [Discover-NOW](#) – HDR Hub for Real World Evidence
- > [Gut Reaction](#) – HDR Hub for Inflammatory Bowel Disease
- > [INSIGHT](#) – HDR Hub for Eye Health
- > [NHS DigiTrial](#) – HDR Hub for Clinical Trials
- > [PIONEER](#) – HDR Hub for Acute Care



Map of the HDR Hubs across the UK. Click on the image to access the interactive online map to learn more.

Public Institutions Supporting Route to Market

National Institute for Health and Care Excellence (NICE)

NICE provides national guidance and advice on how to improve health and social care in order to make healthcare treatment more consistent across the UK. It works with medical colleges and expert organisations to provide the necessary guidelines.

- > NICE's Medical Technologies Evaluation Programme evaluates medical technologies that could offer substantial benefit to patients and the NHS in order to facilitate more consistent and rapid adoption.
- > NICE Medtech Innovation Briefings (MIBs) are designed to support NHS and social care commissioners and staff who are considering using new medical devices and other medical or diagnostic technologies.
- > NICE Office for Market Access (OMA) provides expert advice and helps companies navigate the differing approaches to market access, considering the implications for the technology offering.
- > NICE Scientific Advice (SA) offers a fee-based consultancy service to MedTech developers.
- > NICE International advises international health organisations, ministries and government agencies seeking to use evidence-based decision making to improve their health and social care systems. By sharing best practice and expertise,

Academic Health Sciences Networks (AHSNs)

AHSNs facilitate access into the NHS by bringing together health services, academic and industry partners in order to identify and spread health innovation at pace and scale for patient benefit. There are 15 AHSNs spread across England, and each works across a distinct geography serving a different population in each region. The AHSNs also provide access to multiple avenues of innovation support, including the Innovation Exchange and the NHS Innovation Accelerator (NIA). The NIA has so far successfully supported 49 Fellows representing 52 innovations.

Accelerated Access Collaborative (AAC)

NHS Accelerated Access Collaborative (AAC) brings together industry, government, regulators, patients and the NHS to remove barriers and accelerate the introduction of ground-breaking new treatments and diagnostics. It has supported the spread of 26 late stage innovations, and from April to December 2019, provided access to these products for over 400,000 patients.

The AAC supports all types of innovations and works with HealthTech Connect, a secure, online database of

75

%

9 of 12, or 75%, of AAC's Rapid Uptake Products are MedTech.

For more information on UK life sciences support for medical technology, please [click here](#).

Public Institutions Regulating the Market

Medicines and Healthcare Products Regulatory Agency (MHRA)

The Medicines and Healthcare Regulatory Agency (MHRA) is an executive agency of the Department of Health. It regulates medicines and medical devices for the UK. Their processes aim to protect public health by ensuring that products for UK patients meet appropriate standards of safety, quality and efficacy via the approach to testing products through clinical trials.

The MHRA has a strong global reputation for innovation and leadership in the field of regulation, having been instrumental in shaping the European regulatory systems, and is seen by global industry as a "jewel in the crown" of the UK life sciences ecosystem.

Support:

- > MHRA provides free and confidential expert regulatory information, advice and guidance to organisations of all backgrounds and sizes based nationally or internationally through its Innovation Office.
- > British Standards Institute (BSI Group) is the UK national standards body. BSI help companies comply with regulations and standards, avoid product failures and recalls to help enter new markets.

The UK agreed to a Trade and Cooperation Agreement with the EU effective 1st January 2021. As a result, the MHRA is the UK's standalone medicines and medical devices regulator. The UK will have full independence on regulatory decisions, able to provide a clear, straightforward path. For more information on post-transition regulation, click here.



The MedTech Landscape

The UK offers a mature and dynamic MedTech industry landscape.



Trade Associations

Association of British Healthcare Industries (ABHI)

is the UK's leading industry association for health technology (HealthTech). Members, including both multinationals and SMEs, supply products from syringes and wound dressings to surgical robots and digitally enhanced technologies. They represent the industry to stakeholders, such as the government, NHS and regulators.

Medilink UK

is a national health technology business support organisation with a strong track record in increasing the viability of manufacturers, service providers, designers, OEMs and suppliers of medical technology.

GAMBICA

is the Trade Association for Instrumentation, Control, Automation and Laboratory Technology in the UK. It works to influence policy, standards and regulation for the benefit of the industry.

Tech UK

is the UK's leading technology membership organisation, with more than 850 members spread across the UK. It is a network that enables its members to learn from each other and grow in a way which contributes to the country.

British In-Vitro Diagnostics Association (BIVDA)

is the national industry association for the manufacturers and distributors of IVD products in the UK. They currently represent more than 95% of the industry and over a hundred organisations ranging from British start up companies to UK subsidiaries of multinational corporations.

AXrEM

is the UK trade association representing the interests of suppliers of diagnostic medical imaging, radiotherapy, healthcare IT and care equipment in the UK. The majority of diagnostic medical imaging and radiotherapy equipment installed in UK hospitals is supplied by AXREM members.

Regional Trade Associations include One Nucleus (Greater London-Cambridge), OBN (UK-wide), BioNow (North of England) and SEHTA (South East England).

Click [here](#) for a more comprehensive list of the UK life sciences trade organisations, membership associations, clusters, and research and innovation networks support.

Charity and Patient Organisations

<u>Association of Medical Research Charities (AMRC)</u>	brings together and supports health and medical charities to produce high-quality research. The AMRC's success is a result of influencing policy and research, and highlighting the sector's contribution to patient and public health.
<u>Wellcome Trust</u>	has been a major driver of the UK's competitive international position, being pivotal in enabling world-leading centres such as the Sanger Institute, the Wellcome Genome campus and the Wellcome Trust Centre for Human Genetics. As the largest UK charity, it funds research across numerous health categories: in 2018, its research expenditure was £521 million.
<u>British Heart Foundation</u>	funds research into all heart and circulatory diseases and their causes. In 2018, it spent £86 million on cardiovascular research.
<u>Stroke Association</u>	provides specialist support, funds critical research and campaigns to make sure people affected by stroke get the very best care and support to rebuild their lives.
<u>Alzheimer's Society</u>	is the UK's leading dementia charity. It supports those who are living with dementia, campaigns for change and funds research to find a cure.
<u>Cancer Research UK</u>	funds research into pioneering work on the prevention, diagnosis and treatment of cancer in order to help save millions of lives. With great progress made over the last decades, the charity continues its work, which included £234 million funnelled into cancer research in 2018.
<u>Asthma UK</u>	supports world-leading research and scientists working to stop asthma attacks and, ultimately, cure asthma. In 2020, it merged with the British Lung Foundation, creating <u>a partnership</u> that will bring lasting benefits to everyone in the UK affected by asthma and other lung diseases.
<u>Diabetes UK</u>	is a leading diabetes charity focused on providing healthcare and research to help those living with Diabetes. In the last decade, it has invested over £66 million into critical research.
<u>Cystic Fibrosis Trust</u>	is the only UK-wide charity dedicated to fighting for a life unlimited for everyone affected by cystic fibrosis. It works towards a brighter future for everyone with cystic fibrosis (CF) by funding cutting-edge research, driving up standards of care and supporting people with the condition and their loved ones every step of the way. It also has one of the <u>world's leading databases of patient information</u> , holding the data of 99% of people with CF in the UK.

Sources: UK Clinical Research Collaboration, 'UK Health Research Analysis 2018'.

The UK has a large, mature and powerful charity sector that supports industry research and development. In 2018, these organisations contributed **over £1bn** to UK health research.

Accelerators & Incubators

Major Accelerators & Incubators

- › MedTech SuperConnector (MTSC), funded by Research England, is an Imperial College-led initiative from a consortium of eight dynamic London universities with interest in nurturing talent, ideas, and entrepreneurship. Imperial is also home to the Imperial College White City Incubator.
- › NHS Innovation Accelerator (NIA) is an award-winning national accelerator supporting dedicated individuals to scale their high impact, evidence-based innovations across the NHS and wider healthcare system. It was launched in July 2015 to support delivery of the Five Year Forward View and was more recently highlighted in the NHS Long Term Plan.
- › Manchester Science Partnerships (MSP) are home to a unique community of scientists, innovators, investors and entrepreneurs. By putting collaboration first and providing access to specialist finance, talent, markets, networks and investors, MSP is able to support the acceleration of business growth through innovation. Incubators in the Manchester region include Alderley Park, Citylabs and Manchester Science Park.
- › Milton Park is a dynamic and vibrant science and technology park in Oxfordshire featuring cutting-edge science, technology and innovation businesses. Around 250 companies and 9,000 people belong to the community, working across the Life Sciences, Technology, Pharmaceuticals and BioTech sectors, amongst others.

And Many More...

<u>Accelerate Cambridge</u>	<u>Newcastle Bio-Incubator</u>
<u>The BioHub Birmingham</u>	<u>Centre for Nanohealth Incubator</u> (Swansea, Wales)
<u>Cardiff Medicentre</u>	<u>MediCity Nottingham</u>
<u>London BioScience Innovation Centre (LBIC)</u>	<u>Stevenage BioCatalyst</u>
<u>Institute of Life Science Incubator & Nanohealth</u> (Swansea, Wales)	<u>Oxford BioEscalator</u>

The UK's many incubators, accelerators and other entities support companies developing new innovations.

391

An estimated 186 cross-sectoral accelerators and 205 incubators dot the UK landscape, with huge benefits

75%

The average accelerated company raises 44% more funding and achieves a 75% higher valuation than those that do not.

26%

Incubators support an estimated 6,900 businesses – 26% focus on the Life Sciences, and 13% on health and wellbeing.

Key Companies

Smith+Nephew (UK)

is a leading portfolio medical technology company. It produces products for advanced wound management, orthopaedic reconstruction, trauma and extremities and more. Founded in Hull, England in 1856, it continues to be headquartered in the UK while conducting business across the world.

GE Healthcare (USA)

is a multinational medical technologies company. It has produced four million imaging, mobile diagnostic and monitoring units worldwide and was the first company to deliver the commercial CT scanner – created in the UK in 1972 – the handheld pocket-sized colour ultrasound and a mammography device.

Abbott Laboratories (UK)

established a presence in London and began manufacturing in the UK in 1937. With headquarters in Berkshire and around 1,400 employees, the company develops healthcare solutions designed specifically for the UK—from next-generation diagnostic tools that put patients on the path to better health to medicines that help people of all ages stay active and vital.

Philips (Netherlands)

is a health technology company focused on improving health by leveraging advanced technology and deep clinical and consumer insights to deliver integrated solutions. It develops products in diagnostic imaging, image-guided therapy, patient monitoring and health informatics, as well as in consumer health and home care.

Medtronic (USA)

Is a globally leading medical technology company. It created the first battery-operated, external pacemaker and introduced the prosthetic heart valve, amongst other life-changing medical device innovations. It now has a footprint in over 150 countries and more than 90,000 employees.

Siemens Healthineers

(Germany)

manages several medical technology companies and has operations in over 70 countries. It produces technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

* For a comprehensive list of MedTech companies in the UK (including its Top 30 Medical Device firms (based on employee numbers and turnover), click here to access the [Biotechnology and Health Technology Sector – Life Science company data](#).

Sources: ABPI, 'The Economic Contribution of the UK Life Sciences Industry,' 2017; OLS, 'Biotechnology and Health Technology Sector Statistics 2019'; British Institute of Radiology, 'Sir Godfrey Hounsfield,' accessed Jan 2021.

The Medical Technologies sector contains around **4,060 businesses** in the UK, over 80% of which are SMEs.

These companies are spread across the UK.



FDI Case Study Successes



HeartFlow (USA)

HeartFlow, based in California with offices in London, developed its HeartFlow FFRct Analysis, creating **a personalised 3D model of the heart** so clinicians can better evaluate the impact of a blockage on blood flow. After NICE performed a complete Health Technology Assessment of HeartFlow, the NHS provided funding for the technology, and HeartFlow was selected by the AAC Collaborative to receive bespoke support for **widespread adoption in the NHS**.

*"We've had nearly 300 patients use the new technology. It means that we are able to **diagnose potential obstructive coronary disease earlier**, and those patients that do not have a narrowing of their arteries no longer have to go through any unnecessary and invasive tests."* – Consultant Radiologist, Dr. Ben Hudson



Canon Medical (Japan)

Canon Medical develops and manufactures diagnostic imaging systems and clinical laboratory systems. In 2018, Scottish Enterprise worked with Canon Medical's European Research and Development Centre to provide **an R&D grant of £1.9M towards developing life sciences software** to give medical staff a single 'cockpit' view of patient information to better inform treatment decisions.

"Scotland is a fantastic location for us to innovate as we have access to top talent, universities and research collaborators, together with strong support of the Scottish Government and Scottish Enterprise." – Ken Sutherland President, Canon Medical Research Europe

FDI Case Study Successes



Myriad Genetics (USA)

Myriad Genetics is a molecular diagnostics company based in Salt Lake City, US. The company has a European regional office in London and is collaborating with the Leeds Centre for Personalised Medicine and Health (LCPMH)*, the Leeds Academic Health Partnership, Leeds Teaching Hospitals NHS Trust and the Leeds Institute of Health Sciences* (*hosted by the University of Leeds).

The collaboration, recruiting 100 men, will study the Leeds Fast Track Prostate Pathway with the addition of Myriad's prognostic test, Prolaris®, for both clinical and cost outcomes to determine if it has wider application in routine NHS practice.



OxSonics (UK)

OxSonics developed a new generation of ultrasound devices with the aim of solving a major challenge that exists in the treatment of solid tumour cancers where penetration by anti-cancer drugs face significant limitations. The technology enhances delivery of anti-cancer drugs deep into solid tumours.

MHRA helped OxSonics in a number of ways including:

- › co-ordinating and facilitating an initial meeting to clarify the classification of the particles and the ultrasound hardware, which ensured that OxSonics could work to the correct regulatory standards.
- › providing advice on the scientific and regulatory aspects of the toxicology studies in order to help OxSonics take their development forward.

FDI Case Study Successes



Becton Dickinson (USA)

Becton Dickinson, one of the largest medical technology companies in the world. Based in Berkshire in the UK, BD has manufacturing plants across the country, including in Plymouth and Swindon, and is a major supplier to the NHS. The company provides innovative solutions that help advance medical research and genomics, enhance the diagnosis of infectious disease and cancer, improve medication management, promote infection prevention, equip surgical and interventional procedures and support the management of diabetes.

BD is currently investing £172 million into its Plymouth site, owned since 1981, to produce a range of sample collection products used in diagnostics, creating **200 new jobs**.



Regional Strengths

The UK boasts regional strengths and capabilities relating to the Medical Technologies Industry.



Home to a Dynamic MedTech Sector Across UK Regions

UK Regions Overview

The UK's medical technologies opportunities span across the country. Each region's economy is supported by a large, talented workforce across engineering, science and technology disciplines as well as incubators, science parks and access to public and private funding.

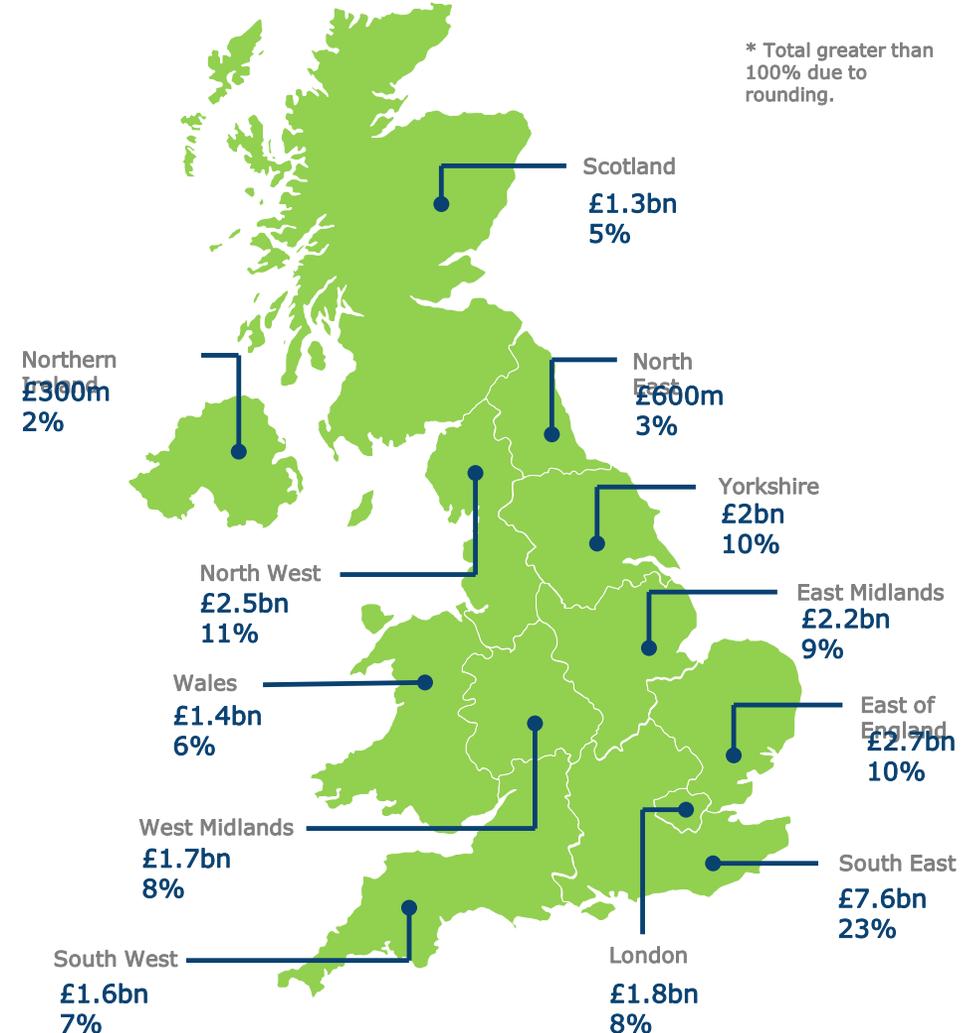
The country benefits from specialisms in IVD, particularly across England, Scotland and Wales; diagnostic imaging in Scotland, the North and the Midlands; medical devices across England, Scotland and Wales; digital health, AI and analytics in Northern Ireland, Scotland, London and the Midlands; precision medicine in Northern Ireland, Scotland and the Midlands; wound care in Wales, the South and the North; and genomics in the South. High Growth Opportunities in these subsectors are already attracting companies and spurring investments.

The UK's strengths will be further supported through the six Life Sciences Opportunity Zones – areas selected to highlight opportunities with available lab space, land to develop new facilities and links to universities.

Finally, Northern Ireland, Scotland, Wales and much of the North and Midlands benefit from lower costs, taking into consideration salaries and Grade A office space.

Sources: OLS, 'UK Medical Technology Sector Statistics,' 2019; GlobalCityUK, 'Leading Global Competitors In Venture Capital & Private Equity,' accessed Jan 2021.

Turnover Value & Distribution of Employment Across UK



Northern Ireland

Overview

Northern Ireland has a deep tradition and long history in MedTech innovation. Ulster University and Queens University Belfast have both developed world-class innovation. NI's economy is supported by [Invest NI](#), the region's economic development agency, which invests over £100m into local companies annually.

Over 8,800 people are directly employed in L&HS companies, contributing to over **£1bn worth of exports** annually. This pool of talent is here to stay with over 4,500 students in L&HS related study in Northern Ireland.

Business Ecosystem

With over 240 life & health sciences companies in the region, over 265 digital ICT companies and 565 advanced engineering companies, Northern Ireland boasts both breadth and depth of capability that is exploited by the joined approach of the Northern Ireland ecosystem with easy access to all stakeholders. This ecosystem has resulted in a resilient supply chain and agility that enables Northern Ireland companies to sustain activity through the most challenging of economic times.

Companies such as **Armstrong Medical, Radox** and **Naturelle** were vital in maintaining supply of critical healthcare equipment during the COVID-19 pandemic, demonstrating the region's resilience.

Belfast has the lowest operating costs of key competing L&HS cities at £2.37m per annum. Belfast is therefore 42% lower than the study average of £4.09m p/a, making it one of the country's most cost-effective locations.

Universities & Centres of Excellence

Northern Ireland's closely aligned MedTech ecosystem facilitates close working partnerships with the region's universities and research institutes, including Health & Social Care R&D. Central to this ecosystem is [Health Innovation Research Alliance Northern Ireland \(HIRANI\)](#), an alliance of universities, health organisations (NHS) and industry bodies. Beyond HIRANI, investors can access over 17 L&HS centres of excellence, government grants and access to the region's Health & Social Care system. Some of NI's notable research centres include:

- > [Connected Health Innovation Centre \(CHIC\)](#) is an industry-led, interdisciplinary team of scientists and engineers working to find innovative medical technology solutions.
- > [Northern Ireland Bioengineering Center \(NIBEC\)](#) is multi-disciplinary in nature and combines expertise in engineering, biology, nanotechnology, AI, physics and material science.
- > Ulster University's [Cognitive Analytics Research Lab \(CARL\)](#) builds on NI's leadership in data analytics by applying its expertise in cognitive analytics research.
- > [Precision Medicine Centre of Excellence](#) is a £10 million initiative from Invest Northern Ireland and Queen's University Belfast, which has created an internationally accredited laboratory focusing on diagnostics that can be used to predict a cancer patient's response to treatment. This will be initially used with breast cancer patients.

Scotland

Leading Innovation

Scotland is home to the first scanning laser ophthalmoscope in the UK to provide enhanced clinical information to detect diseases of the retina (Optos, a Nikon company); a novel imaging system for the non-invasive in-vivo detection of cancerous and pre-cancerous lesions (DySIS Medical); and the world's first commercially available multi-articulated prosthetic hand (Touch Solutions by Össur).

The region has specialisms across the MedTech sector, including in therapeutic devices, imaging, non-imaging diagnostics, IVD, personal care & assisted living devices, surgical & clinical equipment and research equipment.

Business Ecosystem & Support

With over 9,000 people employed in the sector in Scotland, a diverse and supportive supplier community of 150 supply chain companies and a variety of grants and financial incentives, Scotland has a rich life sciences ecosystem with plenty of opportunities for investors. The Scottish Industry Directory provides a database of Life and Chemical Sciences companies to help in the search for customers, suppliers, services or partners, and the Scottish Manufacturing Advisory Service will help set up your manufacturing process and help develop your supply chain.

More support is available through R&D grants for industrial research, Regional Selective Assistance, skills and training support (Life & Chemical Sciences Workforce Development Portal) and funded apprenticeships (including graduate apprenticeships) through Skills Development Scotland

Research Institutes & Talent

Investors are given easy access to clinical skills expertise, disease networks, clinical trials and the innovation ecosystem across Scotland – including the NHS, Scotland's single healthcare provider and the world's biggest healthcare delivery organisation. Direct links to NHS Scotland and Chief Scientist Office are available at NHS Research Scotland.

In addition to the existing network of expertise, Scotland also has a steady pipeline of students and graduates – 21,410 students graduated with degrees in biological sciences, subjects allied to medicine, and engineering & technology in 2018 – to guarantee the continuity and growth of the region's MedTech sector.

Centres of Excellence & Accelerators:

<u>Strathclyde Institute of Medical Devices</u>	<u>Precision Medicine Scotland – Innovation Centre</u>
<u>Institute for Medical Science and Technology (IMSAT)</u>	<u>Innovation Centre for Sensor and Imaging Systems</u>
<u>Medicity Glasgow</u>	<u>Data Lab</u>
<u>Medical Device Manufacturing Centre (MDMC)</u>	<u>Dundee Institute for Healthcare Simulation</u>
<u>The Digital Health Institute</u>	<u>National Manufacturing Institute Scotland</u>

Wales

Business Environment

The Life Sciences sector in Wales employs more than 12,000 people working in medical technology, regenerative medicine, diagnostics, eHealth, pharmaceutical services and neuroscience, and 45,000 people are employed in the digital economy, providing a skilled and experienced labour market for all aspects of the MedTech sector.

Moreover, around 65% of all Welsh based Life Sciences companies are in the MedTech and Diagnostic sub-sector. In the Cardiff Capital Region alone, 200 businesses work in medical diagnostics and devices. The sector has developed into established clusters of excellence in high-growth markets including, in vitro diagnostic, single use technology and ~~wound care.~~

Wales is home to the Welsh Cancer Research Centre and the UK's first high energy Proton Beam treatment facility.

Costs

Property costs and prime office rental prices in Cardiff are very competitive.

- > City centre grade A rents are among the lowest of the UK Core Cities at around £25 per square foot.
- > The average salary for Science jobs in Wales, UK is £32,500. The average salary for Science jobs in UK is £35,000.

Research Institutes & Talent

Wales is at the forefront of eHealth research and maximizes the use of routine data for research. NHS Wales allows access to anonymised healthcare data for the whole population in one database and enables clinical trials to access three million people with a single coordinated permissions process.

The eight universities are home to over 160,000 students, 12,000 of these in Life Sciences, and take part in a wide range of research and technology projects, offering meaningful partnering opportunities for Life Sciences businesses. An additional 6,000+ science and engineering students graduate each year.

Centres of Excellence:

Wales has several world-class research institutes, including:

- > [Centre for Nanohealth](#)
- > [National Centre for Product Design And Developmental Research](#)
- > [Cardiff University Brain Research Imaging Centre \(CUBRIC\)](#)
- > [Centre of Excellence in Mobile and Emerging Technologies \(CEMET\)](#)
- > [Genomics Partnership Wales](#)

Wales

Business Support

Businesses looking to start up or locate in Wales can benefit from a wide range of relocation incentives from a number of agencies including the Welsh Government.

- > The Development Bank of Wales is the largest regional investment company in the UK offering equity, mezzanine and loan investments of up to £2 million.
- > Angels Invest Wales – Part of the Development Bank of Wales with an established network of over 100 investors, helping to match businesses with potential investors.

Accelerators

- > Accelerate is led by Life Sciences Hub Wales, in collaboration with local universities. The £24m programme offers access to the academic expertise, in-depth understanding of the life sciences eco-system, and cutting-edge facilities that innovators and entrepreneurs need to get their idea off the ground.
- > Health Technology Wales is a national body working to promote use of health technologies that offer the most benefit for the people of Wales.
- > Clinical Innovation Accelerator is a joint venture between Cardiff University and Cardiff and Vale University Health Board that aims to accelerate the translation of clinical innovation into improvements in health and clinical services.

Key Companies

Wales can boast some world leading anchor companies. Employment in the Welsh medical technology sector is dominated by significant and leading enterprises, such as GE Healthcare, Siemens Healthcare, Thermo Fisher Scientific, ReNeuron, Renishaw, Creo Medical and Zimmer Biomet.

Case Study: Proton Partners International

Proton Partners International is a UK based company that is building a network of oncology centres, known as the Rutherford Cancer Centres, around the country. Each of these centres will have a suite of services: imaging, chemotherapy, immunotherapy, radiotherapy and the latest high-energy proton beam therapy. The landmark Rutherford Cancer Centre South Wales in Newport is the first centre in the UK to open with those services and started treating the first UK patients with proton beam therapy in March 2018.



"I would encourage any new or established business to come into Wales and get access to this high level of life sciences, academia and healthcare services. There's a whole infrastructure around Wales that is really supportive of new businesses... a rich vein of staff to draw from and a number of skills, locally, that you may not find elsewhere. The Welsh Government are key to ensuring that is a key theme, not just in rhetoric but also in action."

– Mike Moran, CEO of Proton Partners, Aug 2019

Cardiff, the capital of Wales, is the fastest growing city in the UK. It has one of the most talented workforces in the country, and regularly top the quality of life league tables.

London

Overview

London is a global city and a powerhouse of scientific innovation and research. Its financial centre and a strong network of business incubators and accelerators all support an environment geared for investment and business growth.

Research Excellence

London also boasts one of the world's best clusters of medical research facilities, comprising internationally renowned universities, hospitals and a huge and diverse NHS patient population. London is home to cutting edge biomedical engineering based at [Imperial College London](#), one of the top biomedical engineering schools in the world and the source of multiple MedTech spinouts in a wide range of fields from diagnostics to assistive technologies. Just a few of London's research centres include the [Barts Life Sciences](#) at Queen Mary University, [London Centre for Nanotechnology](#) and National Institute of Health Research (NIHR) [London in Vitro Diagnostics Cooperative](#).

To help fight COVID-19, the Imperial start-up [DnaNudge](#) developed high-speed COVID-19 PCR test kits for which the government placed a £161m order for 5.8 million kits to be used in NHS hospitals

[London & Partners' Business Growth Programme](#)

[Digital Health London Accelerator](#)

[Mayor's International Business Programme](#)

[QMB Innovation Centre](#)

[MedCity](#)

[MedTech Super Connector](#)

[South East Health Technologies Alliance \(SEHTA\)](#)

[Health Foundry](#)

London is home to a thriving MedTech sector – with over 390 MedTech & Digital Health companies located in the capital. The number of companies in the sector in London has almost doubled over the past 4 years.

The strength of London as a financial & professional services hub also means that companies have access to capital and the huge range of specialist advisors and professional services firms to help support them.

London is also home to the strongest AI sector in Europe, which is integral to many MedTech innovations from diagnostic imaging interpretation to tumour identification.

The city has more than 60,100 employees in the Life Sciences industry with access to the more than 186,000 life-sciences students studying in the 'Golden Triangle' with more than 56,000 annual graduates – the largest life-sciences talent pool in Europe.

Northern Powerhouse

Overview

The Northern Powerhouse has an economy worth over £339 billion and is home to over 15.5 million people. It boasts successful routes to market, a powerfully connected infrastructure and a strong life sciences cluster.

The Northern Powerhouse life science sector employs 52,730 people in the private sector and supply chain, adding 7,700 jobs between 2010 and 2019.

The region's MedTech turnover reached £4.1bn in 2019 and a further £1.2bn for the supply chain.

In 2018, NPH received 3,172 awards worth £346.71 million in health research from 86 different funders.

Over 1,300 companies and organisations work in the Northern Powerhouse life sciences sector, including some of the industry's global leaders and thriving SMEs, which comprise around 97% of the businesses in the region.

Sector Specialisms

The Northern Powerhouse offers a wealth of opportunity to ambitious life science companies across specialisms.

In Vitro and Molecular Diagnostics

With stellar research institutions like the [MedTech and In Vitro Diagnostics Cooperatives \(MICs\)](#) in Newcastle and Leeds, [DiTA](#) and the [Stoller Biomarker Discovery Centre](#), the North has attracted some major industry players, including Qiagen, Hologic, Abbott Rapid Diagnostics and Your Gene Health.

In Vivo/Digital Imaging

The North has strong imaging expertise, particularly in Leeds, which has the largest and longest running digital pathology capabilities in Europe at [NPIC](#). The North East has Durham's [Centre for Bioimaging](#) and CPI's [National Healthcare Photonics Centre](#), while Manchester hosts a cluster of commercial expertise in optical technologies and diagnostics imaging.

Medical Devices

The region has a long list of companies specialising in local precision-manufactured medical devices and instruments, particularly in Yorkshire & Humber. Unsurprisingly, this cluster has the UK's largest concentration of skills and industry base in precision engineering. With the [Centre for Process Innovation](#) in Sheffield, [Grow MedTech](#), [Medipex](#), Liverpool's [Materials Innovation Factory](#) and [Supply Chain North East](#), investors will have myriad opportunities to connect to key industry players and access support.

Northern Powerhouse

Science Parks & Accelerators

In addition to the opportunities already mentioned, some key locations for businesses to consider are:

- > North East
The Biosphere, located in the Helix in Newcastle, offers a soft landing incentive which includes discounted desk space, and Netpark provides world-class laboratory, clean room and office space and already has 30+ innovative companies to connect with.
- > Yorkshire and Humber
Nexus is for companies collaborating with the University of Leeds, and Platform is home to a specialist digital and tech cluster next door to Leeds Central Station.
- > North West
Manchester Science Park is a science and tech community of over 150 businesses in the heart of the Oxford Road Corridor innovation district. SciTech Daresbury is a campus for tech, digital, data and IoT companies with a 12 month free hot desk as part of a soft landing package, and Liverpool Accelerator is for life science businesses in purpose built offices and labs adjacent to the Royal Liverpool and Broadgreen University Hospital Trust Health Campus, Liverpool School of Tropical Medicine and Liverpool's Knowledge Quarter.

Sources: DIT Northern Powerhouse, 2020.

Alderley Park

Alderley Park is a world-renowned science park and the UK's largest single site life science campus. It provides a space for international collaboration whilst benefiting from Enterprise Zone status. Companies supported by Alderley Park's accelerator programme raised 34.2% of all investment into the North despite representing only 11% of companies in the North. New centres of innovation and validation are being set up at Alderley Park and in Newcastle.

Finally, Alderley Park's Glasshouse is a new facility for MedTech, tech and digital health companies. The newly re-developed 150,000 sq. ft facility opened in February 2020 and offers high specification, collaborative workspace to tech companies and forward-thinking innovative businesses.

World Class Hospitals

The UK benefits from highly collaborative and innovative research networks that link businesses, academia and world-class NHS hospitals. In the Northern Powerhouse, Manchester Royal Infirmary, Newcastle Upon Tyne Hospitals and St James Hospital in Leeds help spur research and sector dynamism.

Southern Region

Overview

The South of England is one of the largest life sciences clusters in the world, attracting world-class talent and businesses to conduct specialised research and develop ground-breaking medical technologies.

The region has 41,880 employees in the MedTech sector.	A further 9,550 work across the supply chain.	Over 1,100 MedTech companies create a rich and dynamic ecosystem.
MedTech Core & Supply turnover reached £10 billion in 2019.	Home to five of the six Life Science Enterprise Zones .	The South added 5,400 jobs in MedTech from 2010 to 2019.

Industry Support & Accelerators

With a world-leading life sciences and MedTech cluster, the South offers plenty of industry support through incentives and support organisations.

- › [MedCity](#) works across London and the greater south east of England to build life sciences collaboration. It partners with a range of organisations – see [here](#) for more information.
- › [SIGHT](#) is a business support programme at the University of Portsmouth to provide help and guidance to SMEs in the healthcare technology sector.
- › Networking and funding in Oxford is accessible through [OION](#), [Oxford Sciences Innovation](#), the [Didcot Growth Accelerator](#) and the [Bioinnovation Hub](#).
- › Cornwall's [Smartline](#) offers enterprise support, grants, funds, events, etc.
- › The [South East Health Technologies Alliance](#) (SEHTA) is a regional health technology network providing business support for membership.

Local Clusters

Plymouth	Oxford	Hertfordshire
Southampton	Bristol	Reading
Portsmouth	Cambridge	Guildford

Southern Region

Research Institutes

Universities across the South not only provide a steady supply of graduates but also establish research collaborations with organisations worldwide.

<u>Plymouth Health Innovation Campus at Plymouth Science Park</u>	<u>Orthopaedic Research Institute and Institute of Medical Imaging & Visualisation in Bournemouth</u>
<u>Norwich Research Park</u>	<u>Exeter Genomics Laboratory</u>
<u>Portsmouth Technologies Trials Unit</u>	<u>University of Plymouth Centre for Health Technology.</u>
<u>University of Brighton Healthy Futures</u>	<u>Surrey Research Park</u>

Life Science Opportunity Zones

Five of the six LSOZs are located in the South – they include:

- > Stevenage Advanced Therapies Campus, Hertfordshire
- > Harwell Science and Innovation Campus, Oxfordshire
- > Cambridge Biomedical Campus, Cambridgeshire
- > Porton Science Park, Wiltshire
- > Discovery Park, Sandwich, Kent

Golden Triangle

The Golden Triangle is an internationally renowned cluster of life sciences companies and research institutions that are at the forefront of innovation across life sciences disciplines, including medical technology. The Greater South East cluster includes Oxford, Cambridge and London, which together have over 3,700 life sciences firms employing over 193,000 workers.

Beyond having four of the world's top 20 universities and three of the world's top ten, the area also has some of the best research centres in the world: the Alan Turing Institute for data science; the Francis Crick Institute, Europe's largest centre for biological research and innovation; Rosalind Franklin Institute, spearheading advanced medical imaging technologies; the Harwell Campus Oxford; the Wellcome Sanger Institute; and more. In 2018, the area received more than £810 million in VC investment, a 15% increase from 2017.

The Golden Triangle has several organisations and science parks supporting the further development of MedTech innovations. The Cambridge MedTech Foundation, for example, exists as part of the Cambridge Brain Injury MIC. The Cambridge Science Park is home to a variety of MedTech giants and smaller start-ups. Oxford University's Old Road Campus likewise supports much of the institution's world-leading clinical medical research and is close to Oxford's hospitals. Finally, premier hospitals like Oxford's John Radcliffe Hospital and Addenbrooke's Hospital in Cambridge provide not only life-saving medical services but also a research platform

Midlands Engine

Overview

The Midlands has a diverse and growing MedTech sector backed by world-leading research institutions and large teaching hospitals. It is home to a mixture of start-ups, scale ups and established businesses with a first-class university ecosystem to support companies based in the region. The region is also one of the country's first 5G testbeds, enabling 5G technology testing for health applications.

The Midlands supports **over 1,200 life sciences businesses**, including **110 MedTech businesses**.

Midland's **economy is worth more than £200 billion**, experiencing **growth of 21%** over the last five years.

Though located just an hour from London, the region offers substantial grade A office space at **up to 60% lower cost than London**.

MedTech **turnover** for the Midlands **reached £3bn** in 2019 – £3.9bn if including the supply chain.

17% of the UK's MedTech employment is based in the Midlands.

Research Excellence

The region has significant strength in clinical trials in terms of both infrastructure and expertise – the [Institute of Translational Medicine \(ITM\)](#) and the [Birmingham Centre for Clinical Trials \(BCCT\)](#), with specific expertise in the design and running of medical device trials (D3B team) and high accrual rates. As one of Europe's largest academic trials infrastructures, together with the Leicester, Nottingham, Warwick and Derby Clinical Trials Units, the cluster amounts to a significant proportion of the UK's clinical trials capability.

- › [NIHR Nottingham Biomedical Research Centre](#), in partnership with Nottingham University Hospitals NHS Trust and the University of Nottingham, works on innovation & research in areas including MRI, Hearing, COVID-19 and Technology.
- › [Health Technologies Institute](#) at the University of Birmingham is working on new technologies that could prevent scarring for trauma patients, early disease detection and better prosthetics.
- › [Imaging, Materials and Engineering Research Centre](#) and the [Medical Technologies Innovation Facility](#) at Nottingham Trent University
- › Home to the world's first MRI, the University of Nottingham's [Precision Imaging Beacon](#) is continuing its world-leading research.
- › [Leicester Precision Medicine Institute](#) collaborates with industry to develop precision medical devices.
- › The University Hospitals of Leicester NHS Trust are among the UK's largest and most research active, hosting several NIHR bodies.

Midlands Engine

Regional Industry Networks & Support

The region has a rich industry network, providing support, guidance and connections to help companies grow. It is home to [BioCity & Medicity](#), one of the UKs largest biotech/MedTech incubators in the UK; the [East & West Midlands Academic Health Science Network](#); [Medilink Midlands](#); and one of the LSOZs – [Birmingham Health Innovation Campus](#) in the West Midlands.

Companies can receive funding through [Invest to Grow](#), which offers capital costs grant and loan support to SMEs in the East Midlands, and the [Midlands Engine Investment Fund](#), which also offers a range of commercial-focused finance, including debt finance, proof of concept and equity funds. The [Biocity investment fund](#) provides pre-seed and seed investment funds.

Accelerators

Medical Devices Technology Evaluation Centre	BizzInn
Data-Enabled Medical Technologies and Devices Hub (DEMAND)	Deloitte Health Tech Catalyst
Serendip Digital Health Quarter	UHCW Innovation Hub
Warwick Science Park Ignite	WM5G 5G Application Accelerator

Business Ecosystem

The region's business ecosystem consists of a mix of local companies and established multinationals.

- › [NuVision](#) spun out of the University of Nottingham in 2015 and is developing medical solutions for the regeneration of sight in patients.
- › [Brightwake](#), founded in 1979, has a long standing reputation as a leader in solving manufacturing and production related problems for the medical sector.
- › [Binding Site](#), founded by researchers at the University of Birmingham, provides specialist diagnostic products to clinicians and laboratory professionals worldwide.
- › [Salts Healthcare](#) is one of the UK's oldest, family-run companies that has grown to become a highly successful international designer and manufacturer of stoma care devices and additional medical products.



Additional Propositions Of Interest

There are a number of other propositions which may be of interest.



Have you seen these propositions?

There are other propositions which complement this Medical Technologies proposition and may be of interest.



Tissue Regeneration & Wound Care – Leeds

- High Potential Opportunity highlighting the opportunity to develop and commercialise tissue regeneration and wound care technologies in the Leeds City Region.



Immersive Technology – North East

- HPO highlighting the immersive tech opportunity in the North East.



Healthy Ageing Sector Proposition

- A national sector proposition highlighting the opportunities in the Healthy Ageing industry.

Upcoming High Potential Opportunities

- > Cell and Gene Therapy – Hertfordshire
- > Molecular Diagnostics & Early Detection – MIDAS and Cheshire
- > Precision Medicine – Scotland
- > Data Driven Healthcare and Technologies – Greater Birmingham and Solihull
- > MedTech Health - Wales

Department for International Trade – MedTech

The Department for International Trade (DIT) can provide support and assistance for your MedTech business.



Setting Up in the UK

Overview of setup process

The UK is one of the easiest countries in which to set up a business, with Forbes ranking the UK first globally for ease of doing business.

From the processes of setting up tax and legal entities through to organising visas and recruiting staff, a number of simple requirements are needed to set-up a business in the UK. Your business can get advice and financial help from government-backed schemes along with help with tax, regional help with exporting and advice on writing a business plan.

Selling to the NHS

A company which has a specific product or service easily matched to an NHS organisation can sell directly to the healthcare service provider of its choice. This process involves identifying the right contact (generally clinicians, the procurement team and the finance team) within the selected NHS organisation. Typically the approach to suppliers will vary according to the value, size and complexity of its requirements.

You can also look to National Frameworks to sell products to the NHS through the Crown Commercial Services, the biggest public procurement organisation in the UK. You can find further guidance on partnering with the NHS here.



* Advised to decide on a legal structure and be incorporated at Companies House before completing other requirements listed.

DIT Support for Investors

The Department for International Trade (DIT) provides end-to-end support for inward investors in the UK.

We support your investment journey whether you are a brand new inward investor or already have an established business in the UK.

If you would like to talk to our specialist team about the opportunities for your business in the UK and how we can help, contact lifescience@trade.gov.uk or your local DIT contact.

You will be introduced to an experienced account manager in the UK or in your home market.

Where will we go from there?

- > We will scope your requirements and where you are now along your investment journey
- > We will agree with you a set of next steps
- > We will assemble a team to support you
- > We can help you benchmark the UK against other locations
- > We can arrange and host visits to the UK to meet with potential partners or to see locations and sites
- > We can coordinate your UK site search
- > We can connect you to subject matter experts in a range of areas
- > We can advise on tax incentives and access to finance
- > We can connect you into the industry community and other sector networks, to facilitate networking and peer-to-peer support

Services we provide to overseas companies (inward investors) include:

- > Accessing market opportunities: helping international companies assess market opportunities in the UK
- > Access and introductions to the right people: working with every UK government department to support access to a vast network of industry experts
- > Setting up in the UK: we provide a range of support from applying for visas and entry to the UK to set up procedures, to the UK tax system and site selection
- > Bespoke market research: compiling in-depth factual reports including market entry support, research and development collaborations and cost analysis
- > On-going government support: continued support after your business is established in the UK, providing assistance on expansion and representing your interests in government
- > Entrepreneurial assistance through a network of mentors to help make a commercial success of early stage





Department for International Trade

The UK's Department for International Trade (DIT) has overall responsibility for promoting UK trade across the world and attracting foreign investment to our economy. We are a specialised government body with responsibility for negotiating international trade policy, supporting business, as well as delivering an outward-looking trade diplomacy strategy.

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