

Biopharmaceuticals Proposition: Executive Summary

September 2021



HM Government



Key Terms

Advanced Therapy Medicinal Products (ATMPs)

Medicinal products which is either a gene therapy medicinal product, a somatic cell therapy medicinal product or a tissue engineered product

Antibodies

Proteins produced by our immune system to fight off invading pathogens. Antibodies are a very important class of drug therapies, and are also used as research tools. Many targeted cancer drugs, including immuno-therapies, are antibodies.

Biologic

Protein-based therapy produced from microbes or cell cultures, typically taken as an injection. Also referred to as “large molecule” drugs. They include antibodies, therapeutic proteins, advanced therapy medicinal products (ATMPS), vaccines and blood & tissue products.

Biopharma: used to refer to therapeutic-focused biotech companies, often but not always the more developed companies of the sector. In this proposition:

- Core Biopharma includes all businesses involved in developing and/or producing their own pharmaceutical products – from small, R&D focused biotechs to multinational Big Pharma. Subsegments include Small Molecules, ATMPs, Therapeutic Proteins, Antibodies, Vaccines and Blood & Tissue Products.
- Biopharma Service & Supply comprises businesses that offer goods and services to Core Biopharma companies including, for example, Contract Research and Manufacturing Organisations (CRMOs) and suppliers of consumables and reagents for R&D facilities.

Biotechnology

Biology-driven technology that uses biological processes to develop products, systems and tools that can help improve our health.

Cell & Gene Therapy

Treatment that involves extracting certain cells from a donor or patient, engineering them outside the body and re-injecting them; and treatment that involves replacing a faulty or missing gene with a working copy.

Genomics

An interdisciplinary field focusing on the study of the human genome and the application of resulting knowledge to human health. Genomics is sometimes considered the entry point for other lines of study (other ‘omics’), including proteomics, transcriptomics and metabolomics.

Life Sciences

Ranging from basic and applied bioscience and biomedical research to the development of pharmaceuticals, biotechnologies, and medical and health technologies.

Precision Medicine

The use of genetic or biological markers to determine whether or not a patient will respond positively to the medicine.

Small Molecules

Chemical medicines below a certain size threshold that can be synthesized in the laboratory and are usually taken in pill form.

Sources: BIA, 'Opportunity on your Doorstep,' Sept 2020; OLS, 'UK Bioscience and Health technology Sector Statistics 2019,' 2020; Vailati-Riboni, Mario et al, 'What Are Omics Sciences,' Aug 2017; UK Gov, 'ATMPs: regulation and licensing,' 2015.

\$496bn
global
market
value in
2026

7.3%
CAGR,
2021-26

80%
Global
clinical
development
pipeline is
biopharma

\$1.1tr
global
medicine
spending
by 2024

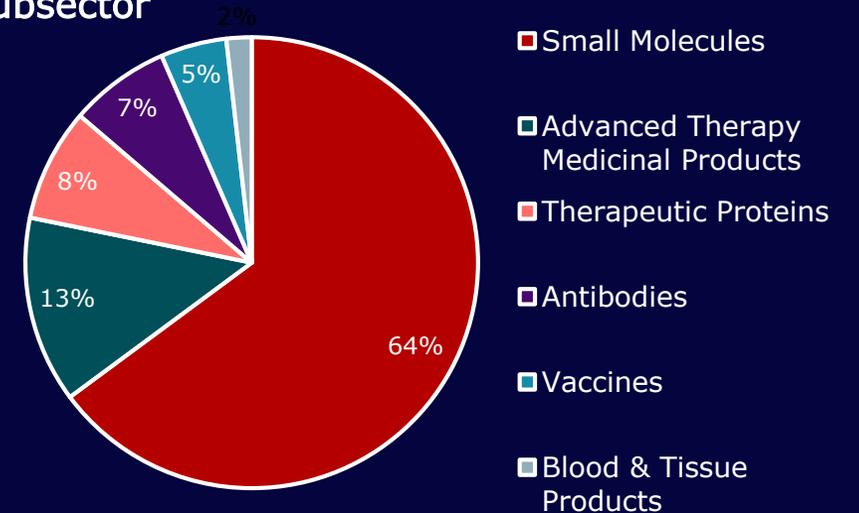
The Global Biopharma Market

Major Trends Impacting the Global Industry

- Ageing Society
- Technological Advancements
- Future Epidemic Preparation
- Rise in Multiple Chronic Conditions
- Growing Demand in Emerging Markets

Sources: IBISWorld, 'Biotechnology in the UK,' Sept 2020; Mordor Intelligence, 'Biopharmaceuticals Market - Growth, Trends, Covid-19 Impact, And Forecasts (2021-2026),' 2020; Panda International, 'Life Sciences Investment in 2020 - Why Biotech is Flourishing,' Nov 2020; BIA, 'Opportunity On Your Doorstep,' Sept 2020; OLS, 'UK Bioscience and Health technology Sector Statistics 2019,' 2020.

Percentage of UK Core Biopharma Businesses by Subsector



Key UK Statistics

2,240
businesses

124,300
employees

£55.1bn
annual turnover

68%
of Life Sciences
turnover

Opportunities Overview

Biopharma		7.3% CAGR globally through 2021-2026		£55.1bn UK annual turnover
Vaccines		\$57bn global market by 2025, from \$37bn in 2019		£544m in R&D funding
Biologics		Nearly a third of global drugs sales		400% increase in investments in the UK since 2012
Small Molecules		8% CAGR globally through 2026		£31.7bn UK annual turnover
Precision Medicine		\$134bn global market by 2025		UK Leadership through Genome UK, Genomics England and UK Biobank

The UK has a vibrant and international industry benefiting from long-term vision, partnership between government and the sector, and supported by a world-class talent base.

Sources: Mordor Intelligence, 'Biopharmaceuticals Market - Growth, Trends, COVID-19 Impact, And Forecasts (2021-2026),' 2020; IBISWorld, 'Biotechnology in the UK,' Sept 2020; OLS, 'UK Bioscience and Health technology Sector Statistics 2019,' 2020; Imarc, 'Vaccine Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2020-2025,' 2020; BIA, 'Opportunity On Your Doorstep,' Sept 2020; Mordor Intelligence, 'Small Molecule Drug Discovery Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021-2026),' 2020; Frost and Sullivan, 'Global Precision Medicine Growth Opportunities, Forecast to 2025', 2017.

Government Leadership & Support

The links below go to Government strategy documents & departments relating to the Life Sciences sector. More details on the following pages.

Government Leadership

[Life Sciences Vision](#)

[Clinical Research Vision](#)

[Life Sciences Industrial Strategy](#)

[R&D Roadmap](#)

[NHS Long-Term Plan](#)

[UK Innovation Strategy](#)

[Life Sciences Investment Programme](#)

[UAE-UK Sovereign Investment Partnership](#)

Supportive Public Institutions

[Office for Life Sciences \(OLS\)](#)

[National Health Service \(NHS\)](#)

[National Institute for Health Research \(NIHR\)](#)

[Academic Health
Sciences Networks
\(AHSNs\)](#)

[Accelerated Access
Collaborative \(AAC\)](#)

[UK Research & Innovation](#)

Non-Departmental

[Innovate UK](#)

[Research Councils](#)

[National Institute for
Health and Care
Excellence \(NICE\)](#)

[Health Data Research
UK
\(HDR UK\)](#)

Sources: OLS, 'Life Sciences Industrial Strategy Update,' Jan 2020

- **Largest and fastest ever expansion**
of support for research and innovation

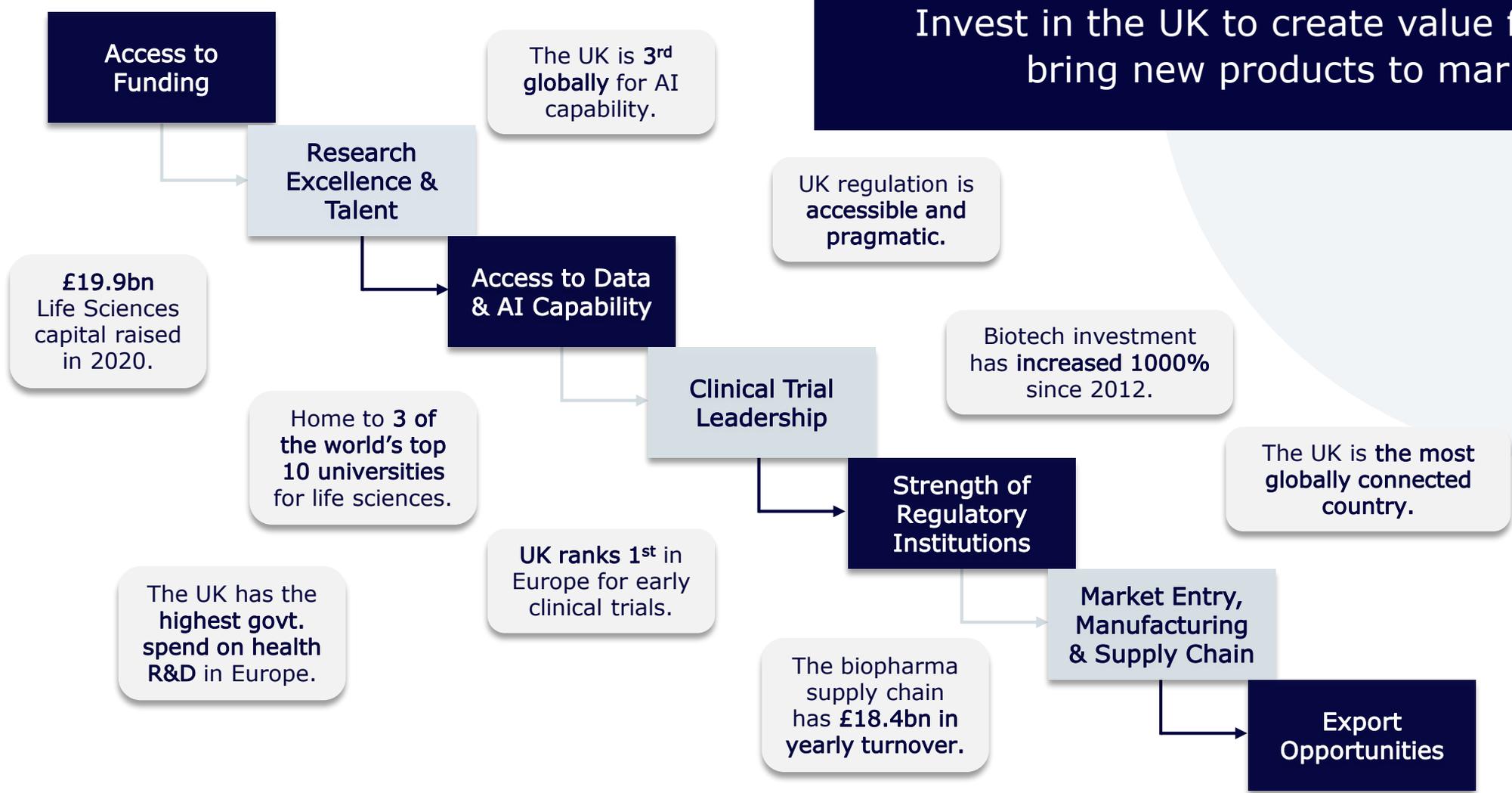
- **2.4% of GDP on R&D**
by 2027, with a longer-term aspiration of 3.0%

- **Additional £4bn**
invested in R&D since 2017

- **2nd globally**
for government spend on health R&D

Capability & Excellence Along the Value Chain

Invest in the UK to create value faster and bring new products to market.



Sources: Savills, 'Spotlight: Life Sciences – Trends & Outlook 2021,' Jan 2021; Oxford Insights, 'Government Artificial Intelligence Readiness Index 2019'; OLS, 'Life Sciences Competitiveness Indicators 2020,' 2021; BIA, 'The Science of Success: UK Biotech Financing in 2020,' Feb 2021; APBI, 'Clinical Trials Report,' 2019; OLS, 'UK Bioscience and Health technology Sector Statistics 2019,' 2020; NYU, 'DHL Global Connectedness Index 2020,' 2020.

The Biopharma Landscape

1.

Centres of Excellence

Benefit from world-leading centres of excellence across the country to develop innovative new medicines.

2.

Third Sector

Take advantage of the research funding, connections and clinical data offered by established charities and patient organisations.

3.

Trade Associations & Networks

Connect with trade associations and networks to link with suppliers, buyers and institutions and be represented both nationally and internationally.

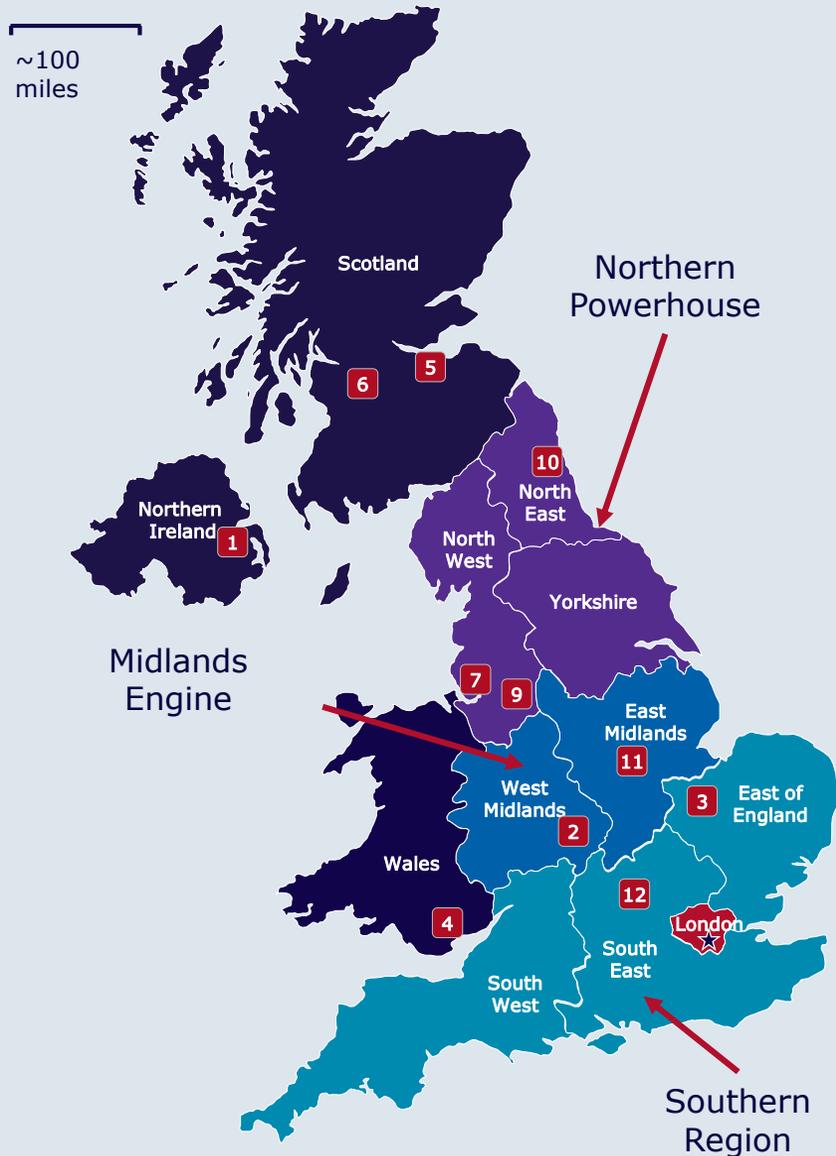
4.

Companies

Join other companies who have established themselves in the UK and benefited from the multitude of institutions, research networks and funding options available.

The UK biopharma sector enjoys collaboration across industry, academia, government, the NHS, and other health funders.

Opportunities and Expertise Across the UK



Regional Summary

The UK's biopharmaceutical opportunities span the country. Each region's economy is supported by a large, talented workforce, 66% of which lies outside the South East and London; world-class life sciences infrastructure including lab space, science parks and manufacturing facilities, as well as incubators and accelerators in which to start up and scale up; established clinical trials networks for streamlined trial operations; and access to public and private funding.

Specialised clusters offer opportunities in high growth subsectors such as precision medicine, cell and gene therapies, vaccine manufacturing, data science and more. The UK has highlighted these High Potential Opportunities (HPOs) to increase inward investment into the UK. Information on HPOs is available on the Great Asset Library. Finally, Northern Ireland, Scotland, Wales and much of the North of England and Midlands benefit from lower costs, taking into consideration salaries and Grade A office space.

The UK's high-growth and high-potential biopharma cities include:

1)	Belfast
2)	Birmingham
3)	Cambridge
4)	Cardiff
5)	Edinburgh
6)	Glasgow

7)	Liverpool
8)	London
9)	Manchester
10)	Newcastle
11)	Nottingham
12)	Oxford

Learn more about each region's biopharmaceutical offer by reaching out to local investment agencies. More information for England [here](#); [Scotland](#); [Wales](#); and [Northern Ireland](#).

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 companies



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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