# Unlocking Value in Life Sciences

## Part 1 – Restoring UK's Competitiveness in the Life Sciences

*March 2025*

# Contents of this report

# A sector under pressure: the future of the UK Life Sciences sector

The Life Sciences sector is a critical contributor to the UK economy today, drawing on the UK's historical strengths in both academia and industry:

- The Life Sciences sector contributes a total of **c.£34bn in GVA** to the UK economy and has grown by c.4% p.a. between 2018 and 2022.
- The sector supports >**300,000 jobs** in the UK.
- In academia, the UK accounts for 4% of researchers, 7% of academic publications, and is home to **four of the top 10 universities** when ranked globally.
- The UK is home to **two of the top ten** global pharmaceutical companies (AstraZeneca and GSK).

However, certain key indicators - such as the UK's share of Life Sciences FDI, and its share of the global clinical trials markets - suggest that the UK's Life Sciences sector faces increased challenge in the context of an increasingly competitive global environment.

- During peak periods, the UK has in the past ranked 2nd in attracting Life Sciences FDI. It has now fallen to 8th, trailing the USA, Germany, France, India, China, Ireland, & Singapore; were the UK to rank 3rd consistently in attracting FDI, it would drive an **estimated c.£1.1bn p.a..** incremental investment
- The UK's global share of pharmaceutical exports has dropped from 7.3% in 2013, to 5.4% in 2018, and to 3.8% in 2023; were the UK to return to its 2018 share, this would drive an estimated incremental **GVA of c.£10.8bn p.a.**, across direct, indirect, and induced benefits
- Relatedly - whilst the UK sector has had broadly flat employment in pharmaceutical manufacturing in the last decade, the rest of Europe has grown its employment by 20% in this area; were the UK to have grown in line with Europe, it would support an estimated further **c.10k jobs in manufacturing**
- Industry interventional clinical trials initiated in the UK have decreased by c.8% p.a. since 2017/18, representing a loss in global share; were the UK to return to its 2017 level of performance, it would result in an estimated incremental **GVA of c.£2.6bn p.a.**

Together, these elements suggest that - over the past decade – an estimated **c.£15bn p.a. gap** has emerged in GVA in the UK Life Sciences sector

If the UK is to preserve and maintain its continued position of strength in the global Life Sciences economy, action is needed. In the face of an **increasingly competitive market**, the UK will need to consider what action it might take to create more fertile ground for Life Sciences enterprise.

This report series – authored by L.E.K. and commissioned by SCI® – makes the case that action in the UK Life Sciences industry may unlock significant further value for the UK economy. It builds and expands on the findings of our July 2023 joint report, The UK Business Case for Action.

Part 1 of focuses on the state of the **UK's international competitiveness in the Life Sciences sector**, highlighting a significant gap in Life Sciences GVA relative to recent historical performance

Part 2 will explore potential **opportunities to amplify growth and unlock greater economic benefit** in the Life Sciences in the UK,.

# Foreword

**Sharon Todd**
*Chief Executive Officer*
*SCI*

This report follows initial research carried out by SCI and LEK in 2023 that highlighted the need for a clear growth strategy for the UK, and specifically for science-based businesses. In that report, the importance of creating an effective ecosystem for starts ups to scale and for large investments to be made was highlighted, and the opportunity across life sciences and clean tech was quantified.

This further research by LEK and SCI starts to address in more detail the issues and opportunities in the life sciences sector, with two reports; this first report focussed on addressing competitiveness, and the second on assessing future opportunities.

Through analysis and in discussions with SCI's community this study outlines how the UK has slipped down the global rankings as an attractive place to invest, with a consequent significant GVA loss to the UK economy emerging, estimated at around £15bn pa.

In addition, the lack of focus on investment in manufacturing has resulted in a loss of opportunity to create additional economic and societal value, including the opportunity to create jobs. As the global environment becomes ever more challenging and fragmented, this trend will rapidly accelerate, and there is a clear call to action to address the leakage of value.

The UK has a great heritage, excellent universities, and strong businesses, but unless it creates a more competitive environment it will not attract the businesses - and the capabilities - needed to maximise on its great asset base and accelerate economic growth.

I would like to acknowledge the contributions made by many organisations and SCI members to the findings of this important report.

# About the authors

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Jack Duckworth is a Partner in L.E.K.'s Global Industrials Practice, and is based in L.E.K.'s London Office.

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Jack advises clients on a broad range of commercial issues including growth strategy, performance, technology commercialisation, economic impact analysis and transaction support.

# The Life Sciences sector is an important part of the overall UK economy. In recent years, however, a number of signals suggest that it is coming under increased pressure

## The Life Sciences sector is a critical contributor to the UK economy today…

*The sector contributes significant value to the UK economy, and is a major driver of both GVA and jobs*

- £34bn in GVA
- 304K jobs
- Top 5 exports

*The UK remains a leader in international academia with a disproportionate share of high-quality institutions and publications*

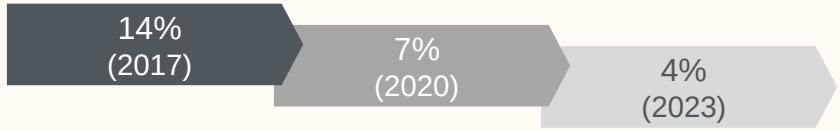
- **4%** of scientific researchers
- **7%** of academic publications
- **4 of top 10** universities

*The UK is host to two of the world's top 10 pharma companies, and a thriving biotechnology sector*

AstraZeneca GSK

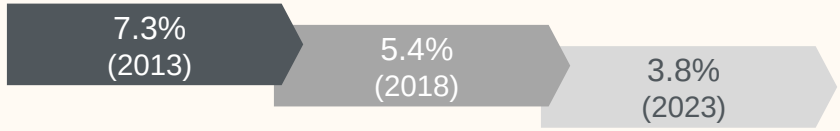
## … however, a number of signals suggest that the sector is facing challenge

*The UK ranks 8th in Life Sciences FDI, whilst during peak periods it ranked 2nd*




*UK market share in Life Sciences FDI*

*Over the past decade, the UK's share of global pharmaceutical exports has halved*




*Number of UK Life Sciences IPOs*

*The number of industry initiated clinical trials is rapidly declining in the UK due to slow timelines, poor recruitment, and high costs*

- **25 day** delay in time to trial initiation (2018-20)
- **<50%** of UK trials reach target recruitment
- **40%** drop in industry trials since 2017

Source: Life Sciences competitiveness indicators 2024: summary (2024); ABPI, (2022). Rescuing patient access to industry clinical trials in the UK; ABPI, (2024). Comparing new medicine availability across Europe; IQVIA, (2024). EFPIA Patients W.A.I.T Indicator 2023 Survey; British Business Bank: Small Business Equity Tracker 2024



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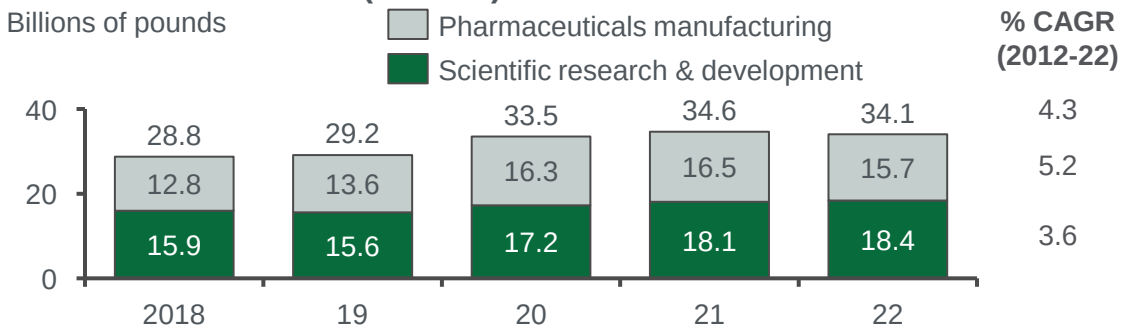
# The Life Sciences sector is vital to the UK economy, driving c.£34bn in GVA, and employing >300K people; the sector has historically been underpinned by strength in the UK's academic institutions

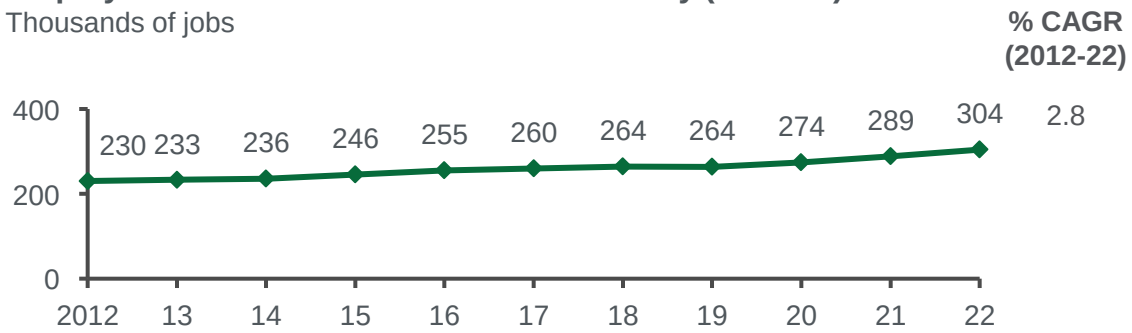
## The UK Life Sciences sector contributed **c.£34bn in GVA in 2022**

**UK Life Sciences GVA* (2018-22)**



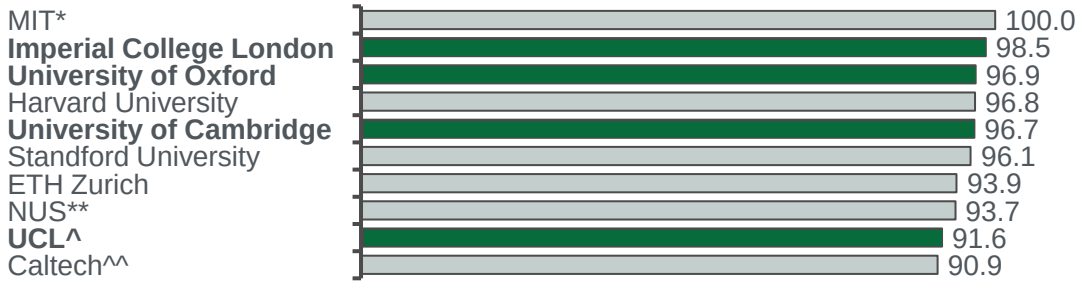

## **>300,000 people** are employed by UK Life Sciences companies

**Employment in the UK Life Sciences industry (2012-22)**



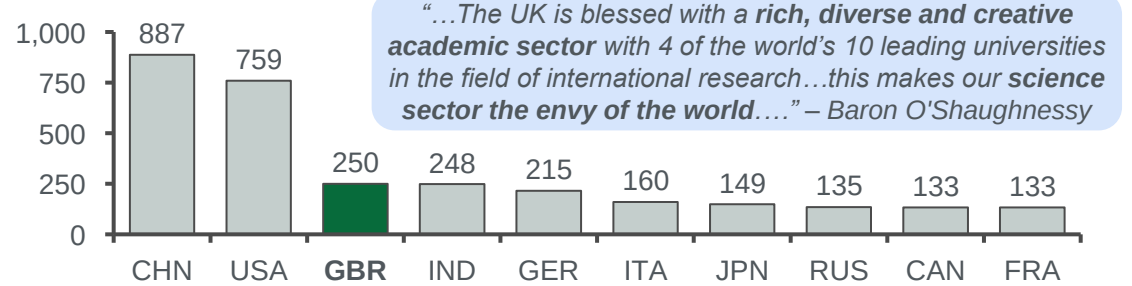

## The UK is home to **four of the top ten** universities in the world …

**QS World Top 10 Universities (2025 rankings)**




## … and it ranked **third** in the global volume of **publications** in 2023

**Documents published, top 10 countries (2023)**




*"…The UK is blessed with a **rich, diverse and creative academic sector** with 4 of the world's 10 leading universities in the field of international research…this makes our **science sector the envy of the world**…." – Baron O'Shaughnessy*

Note: *In chained volume measures and rebased to 2019 prices

Source: ONS, (2024). Regional gross value added (balanced) by industry; Bioscience and health technology sector statistics 2021 to 2022; ONS, (2024). UK trade: April 2024; UK Board of Trade, (2022). Life Sciences: What's next for this top UK sector?



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# However, data suggest that the UK's international competitiveness in the Life Sciences sector may be waning, with a consequent estimated c.£15bn p.a. gap in GVA arising over the last decade

## Competitiveness of the UK Environment for Life Sciences

*The UK underperforms its Global counterparts in attracting **Foreign Direct Investment** in the Life Sciences*

*The UK underperforms geographies such as Germany, France, Ireland, and India in attracting Foreign Direct Investment into the Life Sciences*

Improving the UK's ability to attract FDI could result in an estimated increase in investment of

**c.£1.1bn p.a.**

*The UK's share of the global **Pharmaceutical Export** market has halved over a ten-year period*

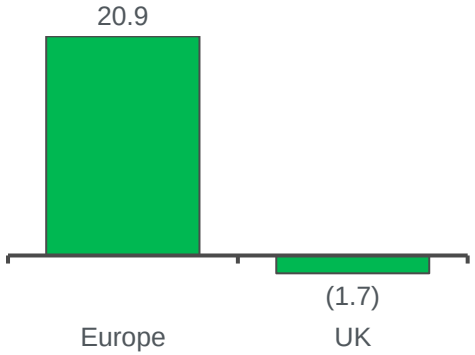
***UK's Share of Global Pharmaceutical Exports***


If the UK were to perform at its 2018 market share in global pharmaceutical exports, it would support an incremental estimated

**c.£10.8bn p.a. in GVA**

***Pharmaceutical manufacturing** in the UK has experienced declines, against growth in Europe as a whole*

***2012-22 Total <u>percentage</u> growth in Pharma Manufacturing Employment***



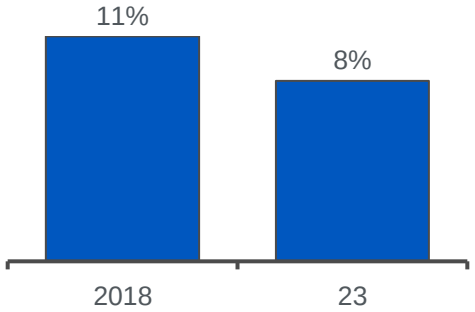

If the UK had grown pharmaceutical manufacturing in line with Europe over the last decade, it would support an incremental estimated

**c10k jobs in manufacturing**

## Decline in UK Clinical Trials

*The UK has experienced declines in its global share of Industrial **Clinical Trials***

***UK's Share of Global Clinical Trial Activity***




Improving competitiveness in the UK's clinical trial activity could result in an estimated increase of

**c.£2.6 bn p.a. in GVA**

Source: Life Sciences competitiveness indicators 2024: summary (2024); ABPI, (2023). Getting back on track: Restoring the UK's global position in industry clinical trials

# Whilst recent reviews (O'Shaughnessy and Harrington) have explored the steps required to support growth, the Life Sciences industrial community highlight further action should be considered

***Beyond the recent Harrington and O'Shaughnessy reviews, the following further recommendations should be considered***

## Competitiveness of the UK Environment for Life Sciences

- Designing and deploying a **holistic incentive system** to meaningfully influence investment decisions and drive growth across the value chain, from R&D to scale up to manufacturing.
- Ensuring the **foundational enablers** of international competitiveness are in place, including considerations of energy strategy and cost.
- Facilitating and promote the prominence of the **Office for Investment** in tandem with the Office for Life Sciences
- Ensuring that **academic institutions are resourced** to continue to provide the skilled workforce needed across R&D and manufacturing in the Life Sciences Economy

## UK Clinical Trials and regulation

- Appointing a senior lead to take responsibility for **driving the O'Shaughnessy recommendations** to fruition
- Reinstating the **commitment to 14 days approval** for Phase 1 Clinical Trials
- Accelerating initiatives to **promote Phase 3 clinical trials** to be delivered in the UK
- **Adapting the MHRA's approach** to better align with, and potentially adopt, global regulatory standards to allow greater relative focus on innovation

Source: Harrington Review of Foreign Direct Investment (2023); Lord O'Shaughnessy (2023). Independent report: Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report



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# The UK's performance in pharmaceutical exports, manufacturing, and FDI are all suggestive of a decline in international competitiveness of the UK's Life Sciences sector

## Competitiveness of the UK Environment for Life Sciences

## Decline in UK Clinical Trials

- A number of indicators suggest that the UK's overall **international competitiveness** in the Life Sciences Sector is declining:
  - At peaks in the UK's historical performance in attracting Foreign Direct Investment (FDI), the UK has ranked 2nd; more frequently, the UK now ranks 6th
  - The UK's share of global pharmaceutical exports has declined from 7.3% in 2013 to 3.8% in 2023
  - The UK's employment in pharmaceutical manufacturing has shown modest decline in the last decade, whilst Europe as a whole has grown by 20.9%
- Two of the principal mechanisms that are employed to incentivise the development and creation of research and LS industry in the UK: **R&D Tax incentives, and Patent Box** – the former incentivising the creation of IP in the UK, and the latter incentivising the commercialisation of that IP in the UK
  - Data supports that – overall – the UK's R&D tax incentive scheme is generous in terms of its overall share of GDP, but that the absolute level of support provided to an individual company (15%) is lower than other jurisdictions (30%)
  - Whilst Patent Box does provide support for commercialisation, other jurisdictions offer more direct and further support down the development lifecycle
- The 2023 **Harrington Review** of FDI, which reviewed how the UK can better attract FDI into growth sectors in the UK, concluded that a combination of enhancing the investment proposition for the UK, a streamlined investment process, and policy consistency were critical to safeguarding the UK's future growth in FDI

Were the UK to **rank third** in its attraction of **FDI,** this would yield a further estimated **c.£1.1bn p.a. investment** in the UK Life Sciences economy

Had the UK grown its **pharma manufacturing** with the **European average** over the past decade**,** this would have created an estimated incremental c.**10k jobs**

Were the UK to return to its 2018 global share of **Pharmaceutical Exports,** this would drive an estimated **c.£10.8bn in GVA p.a.**

# There are two principal government mechanisms that support the UK's Life Sciences Economy: R&D Tax Credits and Patent Box

## Government incentives available to UK Life Sciences companies

*Incentives offered by the UK*

### R&D tax credits

- Allows companies investing in R&D to reduce their tax bill or claim payable cash credits based on R&D expenditures
  - eligible activities must seek to advance a field of science or technology
- Encourages companies to invest in innovation and technological advancements whilst reducing the potential financial risk and burden associated with R&D activities
- The UK Government's investment in R&D tax credits supports fosters economic growth, technological progress, and maintaining global competitiveness

### Patent Box

- Introduced in 2013, the Patent Box reduces corporation tax on profits generated through patents to an effective rate of 10%
  - following, the rise of in UK corporation tax rates from 19% to 25% in 2023, the Patent Box regime continues to be attractive to companies
- The Patent Box aims to encourage companies to maintain and commercialise IP in the UK
  - this supports the UK government encouraging local innovation, and retaining high-value businesses in the UK

*Other mechanisms (not exhaustive)*

### Manufacturing credits, soft loans, and amplifiers

- International counterparts offer other incentives (e.g., soft loans, manufacturing credits, and amplifiers)
  - this highlights a shift in the global landscape, with other markets offering more holistic incentive packages to Life Sciences companies
- These incentives include credits or pricing premiums for clinical trials conducted locally, support for companies investing in local manufacturing facilities, and pricing premiums for products prioritising local launches

Note: *LSMIF – Life Sciences Innovative Manufacturing Fund
Source: Research and Development tax relief for small and medium-sized enterprises (2024); PWC, Research and development tax credits; Introduction to sector deals, (2019); Life Sciences Sector Deal 1, (2017)



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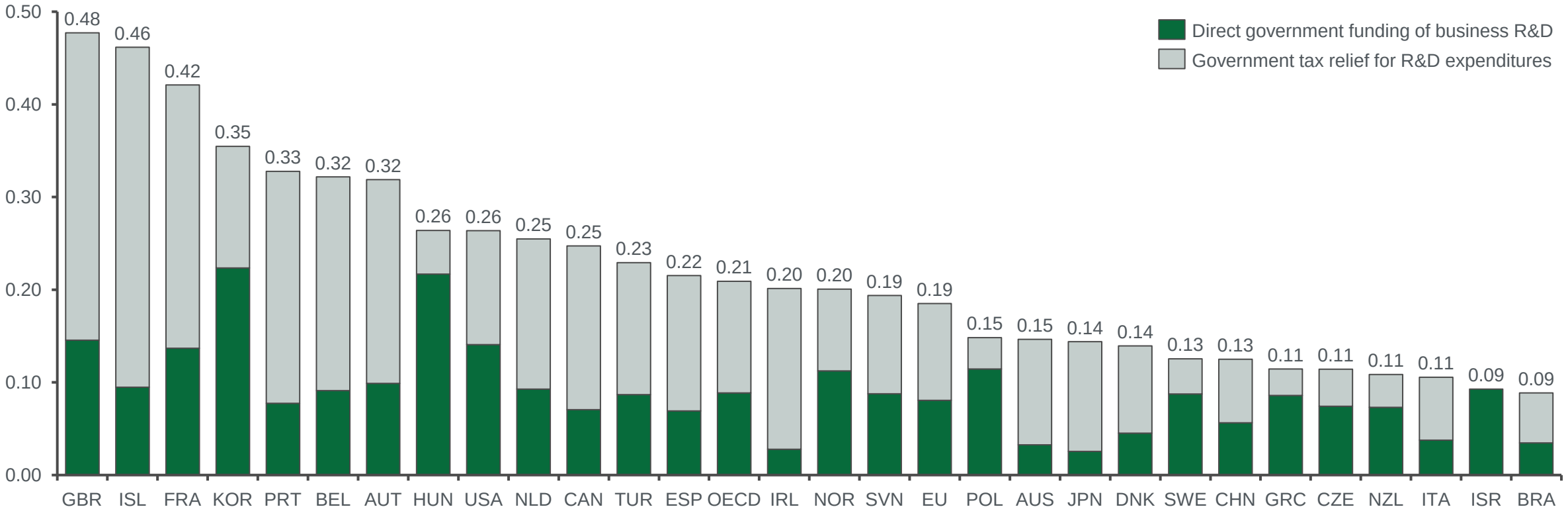
# The UK has historically ranked highly in its overall funding of R&D, with significant direct funding and tax relief as a proportion of overall UK GDP …

**Direct government funding and government tax support for business R&D* (2021)**

Percentage of GDP (%)




Note: * Does not consider Patent Box regime
Source: OECD, R&D Tax Incentives

# … however, the tax credit rate provided to R&D-focused industry of 15% in the UK is significantly lower than that offered by other geographies, such as Belgium, France, the Netherlands, and Ireland

## R&D incentives available across countries

*Decreasing extent of support*

| | R&D Tax Credits | | Patent Box |
|---|---|---|---|
| | Tax credit rate | Example qualifying costs | |
| **Ireland** | **30%** | • Salaries, agency staff, individual consultants, equipment, buildings, some royalty payments | • **10%** effective tax rate for profits arising from qualifying assets |
| **Netherlands** | **32%** up to €350k + **16%** for amounts >€350k | • Salaries, materials, consumed, capital R&D equipment, software licenses, external testing costs, equipment rental | • Eligible R&D income taxed at **9%** instead of CIT rate of 25.8% |
| **France** | **30%** up to €100mn + **5%** for amounts >€100mn | • Salaries, amortization, operating costs, patents, and social security contributions | • **10%** CIT rate applicable to the net income derived from licensing of patents |
| **Belgium** | Advantage of the investment deduction multiplied by CIT rate of 25% | • Acquisition values, depreciation of fixed assets, R&D staff costs, costs of filing patents, and obtaining plant maintenance certificates | • IP income taxed at a rate of **15%** with 25% or 50% cost deduction depending on the amount |
| **Singapore** | RICs awarded based on qualifying expenditures | • Staff costs, consumables, outsourced services, payments under agreements, capital expenditure, employee training expenses | • Corporation tax reduced to **5% or 10%** for qualifying IP income |
| **UK** | **15%** tax credit rate | • Salaries, contract fees, materials consumed and overhead | • Corporation tax reduced to **10%** on profits derived from qualifying IP |
| **Germany** | **25%** tax free subsidy up to €2.5mn for large corporations | • Salaries, and contract fees | *n.a.* |
| **Canada** | **15%** non-refundable | • enhanced credit of 35% for small Canadian-controlled private corporations | *n.a.* |
| **USA** | **14%** of QREs over 50% of the avg. annual QREs in the 3 prior years* | • Employee wages, supply expenses, contract research expenses, computer costs | *n.a.* |
| **Switzerland** | *n.a.* | | • Maximum relief of **up to 90%** for qualifying patent profits |
| **China** | *n.a.* | | *n.a.* |

Note: CIT – corporate income tax; QRE – qualified research expenditure; *ASC – alternative simplified credit, the regular research credit method may also be used

Source: EY Worldwide Research and Development Incentives Reference Guide (2024); PwC, Worldwide Tax Summaries; TaxEDU, Patent Box; RDP Associates; BDO, R&D Tax Credits for the Life Sciences Industry

**Key:** Incentive available

# Whilst the UK offers R&D Tax Credits and the Patent Box, other jurisdictions provide greater support further along the development lifecycle

## Mechanisms supporting investment from Life Sciences companies

*R&D / Early-stage research* → *Scale industry / manufacturing*

- Generous R&D Tax Credits system for large and small corporations and internationally comparable Patent Box regime
- Companies conducting a "relevant part" of clinical trials locally may benefit from flexible pricing rules for reimbursement of drugs when they enter the market in Germany
- Order 551 offers procurement budget guarantees (e.g., of 25 to 100%) to products manufactured locally
- Research collaboration tax of 40% offered for collaborative contracts with ORDCs
- Tax credits and grants to attract companies to conduct local clinical trials
- Sakigake system includes a price premium of 5-10% for new drugs that are launched in Japan alongside U.S. and / or European markets
- Series of incentives announced in Dec. 2024 to reduce regulatory hurdles for drugs (e.g., marketing exclusivity, pilot to reduce trial authorisation timelines)
- PDP incentivizes technology transfer from Life companies in exchange for guaranteed market share in public procurement of drugs
- Several incentives for setting up local manufacturing capabilities (e.g.,10% price premium for products manufactured locally)

Note: ORDCs – Research and Knowledge Dissemination Organisations; PDP - Partnership for Productive Development
Source: EY Worldwide Research and Development Incentives Reference Guide (2024); PwC, Worldwide Tax Summaries; TaxEDU, Patent Box; RDP Associates; BDO, R&D Tax Credits for the Life Sciences Industry; Ropes & Gray; gov.uk, The Life Sciences Innovative Manufacturing Fund (LSIMF); CIID, Singapore's biomedical cluster



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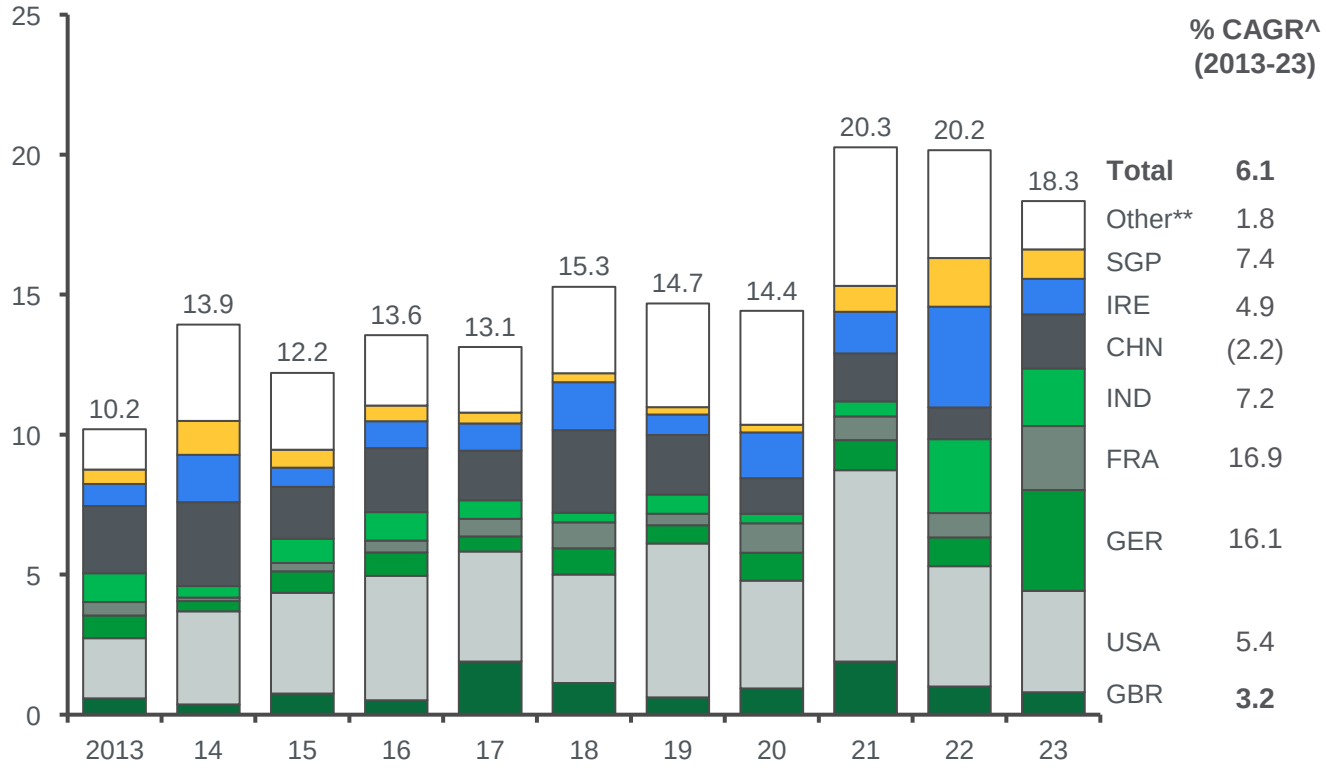
# In 2023, the UK ranked 8th in its attraction of FDI in Life Sciences; were the UK consistently to rank third internationally in its attraction of FDI, this would represent an incremental £1.1bn p.a. of investment

**Life sciences inward FDI* - estimated capital expenditure (2013-23)**

Percent (%), Billions of pounds




- During periods of heightened FDI activity in the UK Life Sciences sector, the UK has ranked 2nd globally in Life Sciences FDI; in 2023, the UK ranked 8th globally in its attraction of FDI in the Life Sciences sector
- The Harrington review of FDI highlighted that over the past two years the US and EU have implemented investment-focused policy developed to win a higher share of FDI
- Restoring the UK's competitiveness in its attraction of global FDI in the Life Sciences industry to its historical peak would represent an estimated uplift in activity of **c.£1.1bn p.a.** in investment:
  - This would equate to ranking third in global FDI, a position more commonly occupied by (e.g.,) France and India in recent years
  - Were the UK to rank second in FDI – i.e.., at the level that Germany and Ireland have performed in the last two years – this would equate to incremental FDI of £2.2bn p.a.

Note: *Only includes publicly available data on FDI, and does not capture M&A; **Other includes Canada, Australia, Netherlands, South Korea, Japan, Belgium, Switzerland, Russia, Italy, and Sweden; ^Of absolute values for inwards FDI; NSI Act: National Security and Investment Act 2021

Source: Life Sciences competitiveness indicators 2024: summary (2024); ABPI, (2023). UK Life Science inward investment in freefall; Baker McKenzie, (2022). United Kingdom: Foreign investment screening and healthcare; Harrington Review of Foreign Direct Investment (2023)



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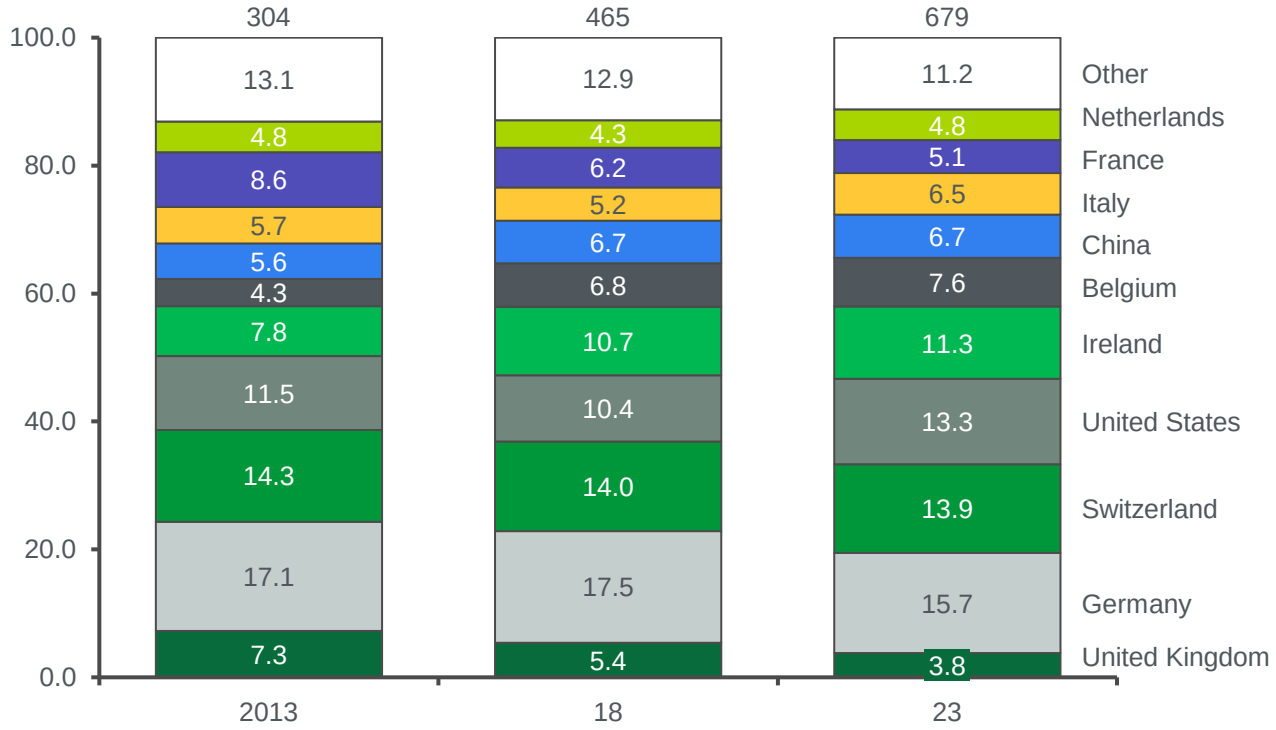
# Over the past five years, the UK has lost significant share in export of its pharmaceutical products; were the UK to have maintained its 2018 global share into 2023, pharmaceutical exports would be £11bn higher

**Share of Global Pharmaceutical Exports (2013 to 2023)**

Percent, billions of pounds




| | 2013 | 18 | 23 |
|---|---|---|---|
| **UK Exports (£bn)** | 22.1 | 25.1 | 25.6 |

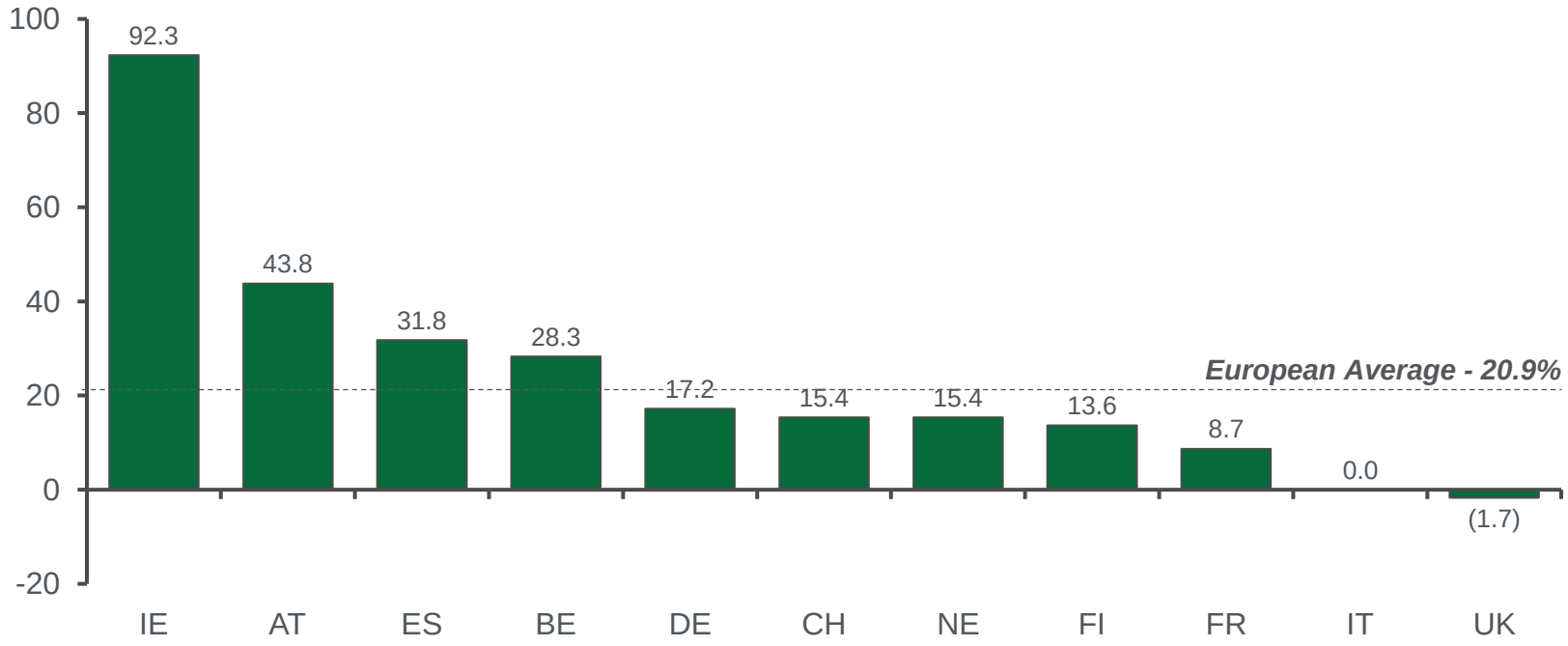
- In 2013, the UK represented 7.3% of global pharmaceutical product exports, totalling some £22.1bn of overall sales;
  - this represents some £22.1bn of overall export sales
  - at this level of exports, the UK ranked 6th globally
- Over the past decade, however, the UK's share of global pharmaceutical exports has dropped materially:
  - by 2018, the UK's share of exports had dropped to 5.4%
  - By 2023, the UK's share of exports had dropped to 3.8%
- Were the UK to have maintained its 2018 global market share in exports into 2023, this would represent incremental export sales of **c.£11.1bn**
- This incremental export sales could drive a significant increase in UK economic activity; **£10.8bn** of incremental outputs would deliver:
  - An estimated **c.£5.4bn** of incremental GVA to the UK economy from direct economic impact
  - A further estimated **£3.1bn** of incremental GVA from indirect benefit, and **£2.3bn** from induced

Source: Life Sciences competitiveness indicators 2024: summary (2024);

# Over the past decade, whilst the majority of European countries have grown in their manufacture of pharmaceutical products, the UK's equivalent sector has experienced modest decline

**Total growth in the number of people employed in the manufacture of pharmaceutical products over the last decade (2012 to 2022)**

percent




*Thousands of employees, by year*

| | IE | AT | ES | BE | DE | CH | NE | FI | FR | IT | UK |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2012** | 30.9 | 13.2 | 38.4 | 22.6 | 122.0 | 38.7 | 13.0 | 4.4 | 46.0 | 64.4 | 48.1 |
| **2022** | 59.5 | 20.1 | 50.6 | 30.5 | 143.0 | 44.9 | 17.0 | 5.0 | 50.0 | 65.6 | 48.1 |

- Over the period 2012 to 2022, the level of employment in the manufacture of pharmaceutical products has stagnated in the UK, with growth over that full period approximately flat
- This is in contrast to other comparable geographies across Europe, which have grown at an average total of 21% over that same period
- In 2022, the UK derived some c.£13bn in GVA from activities associated with the manufacturing of pharmaceutical goods
- Were the UK's pharmaceutical manufacturing workforce to have grown at the same level as the rest of Europe, it would have represented an incremental **10k jobs** in the UK economy

Source: Life Sciences competitiveness indicators 2024: summary (2024);

# Whilst progress has been made on the recommendations arising from the Harrington review, there remain areas where further action should be considered

## Competitiveness of the UK Environment for Life Sciences

The November 2023 Harrington Review highlighted a number of needs to enhance the UK's international competitiveness; following the review, an Office for Investment has been created, headed by a senior, accountable minister. However, work continues to be needed across the other key areas of recommendation from that review:

1. Aligning on a **consistent, stable and clear vison** of the UK's overarching business investment strategy
2. Driving regional growth, and making better use of **local insight**
3. Delivering meaningful and measurable **improvement to the business environment** for the investor community
4. Delivering **strategically targeted incentives,** that have the capacity to genuinely influence investor decision making

## *In addition, the following further recommendations should be considered*

- Designing and deploying a **holistic incentive system** to meaningfully influence investment decisions and drive growth across the value chain, from R&D to scale up to manufacturing.
- Ensuring the **foundational enablers** of international competitiveness are in place, including considerations of energy strategy and cost.
- Facilitating and promote the prominence of the **Office for Investment** in tandem with the Office for Life Sciences
- Ensuring that **academic institutions are resourced** to continue to provide the skilled workforce needed across R&D and manufacturing in the Life Sciences Economy

Source: Harrington Review of Foreign Direct Investment (2023); Lord O'Shaughnessy (2023). Independent report: Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report



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# In recent years, the UK has experienced declines in the level of commercial clinical trial activity, with consequent downstream negative impacts on health benefits, cost efficiency, and economic activity

## Competitiveness of the UK Environment for Life Sciences

## Decline in UK Clinical Trials

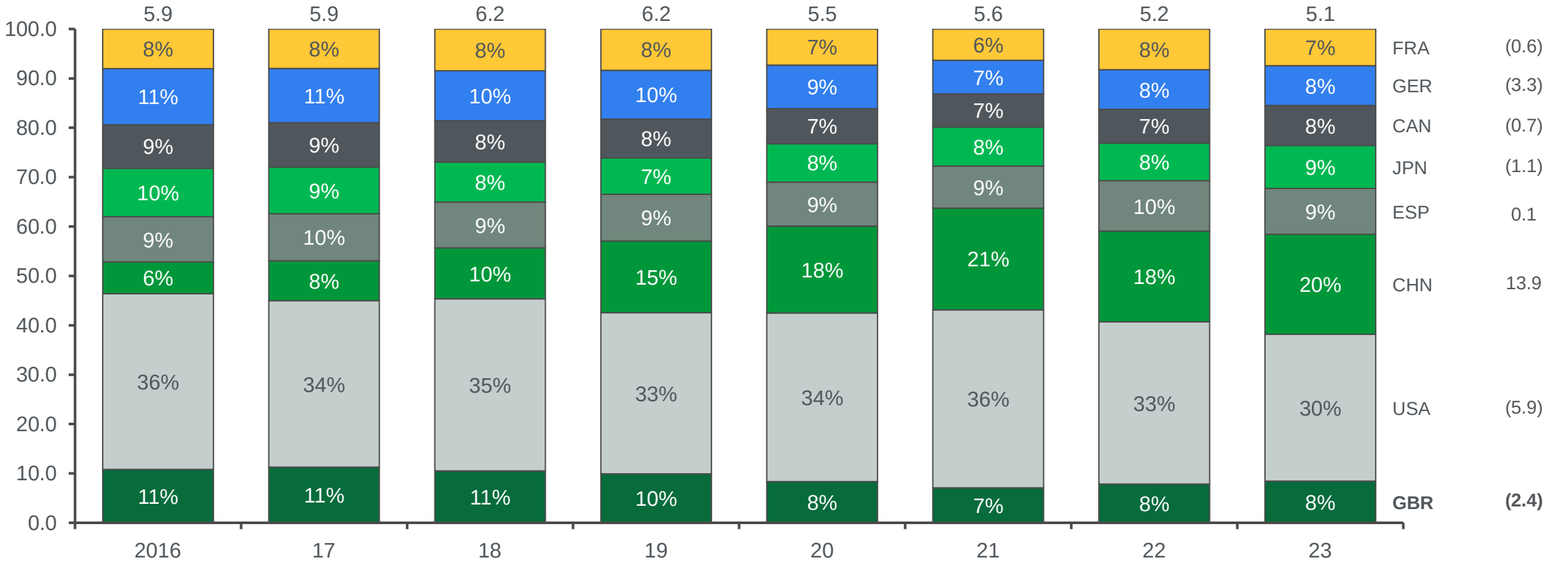
- Clinical trials are an **important contributor** to the overall UK Life Sciences and Healthcare ecosystem, delivering:
  - Health benefits to the individual participants in clinical trials, who gain access to cutting edge therapies for the treatment of their conditions
  - Cost efficiency to the NHS, which would otherwise itself have to fund the provision of therapies to treat the relevant trial patient population
  - Economic growth to the UK, creating high value jobs by driving hubs of scientific expertise and innovation within the UK economy
- Today, and across direct, indirect, and induced impact, it is estimated that the clinical trials economy **contributes c.£6-7B p.a. in GVA** to the UK economy
- In recent years, **the UK has fallen behind** in terms of its involvement in commercial clinical trial activity, with the number of industry trials conducted in the UK in 2023 representing a c.40% decline on the level achieved in 2017
- The 2023 O'Shaughnessy Review delivered a thorough review of the potential mechanisms to enhance the UK's international competitiveness in clinical trials, and arrived at 27 recommendations to drive growth, including reducing trial set-up times, embedding research into the NHS, and enhancing mechanisms for transparency
- However, feedback from industry suggests that **progress to deliver on these recommendations has thus far been slow**, and that the unique characteristics of the UK environment, including the role that they NHS can play, remain underleveraged to deliver on growth potential

Were the UK to return to its 2017 level of performance in the global market for clinical trials, it is estimated that this would yield an uplift in **GVA of c.£2.6bn. p.a.**

# In recent history, the UK's share of the global clinical trials market has declined markedly, from a peak of c.11% to c.8% today

**Industry interventional clinical trials by country* (2016-23)**

Thousands of trials




Note: *Top 8 countries with data available across all trial phases between 2016 and 2023

Source: ABPI, (2024). The road to recovery for UK industry clinical trials; ABPI, (2023). Getting back on track: Restoring the UK's global position in industry clinical trials



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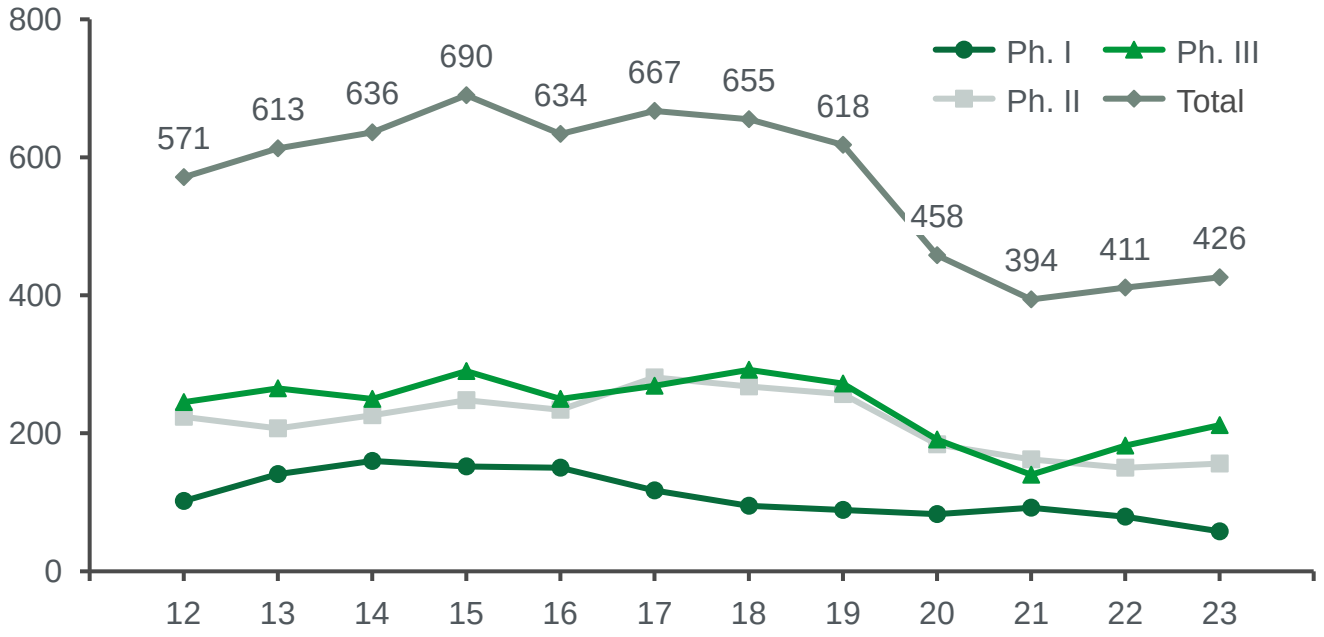
# Data suggest that the number of industry trials in the UK has declined across all phases of trial activity, representing a significant loss in global share in the global clinical trial market

**Pharmaceutical industry interventional clinical trials initiated in the UK, by phase (2012-23)**

Number of trials initiated




| | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Global trials* (k)** | 6.2 | 6.1 | 6.2 | 7.1 | 7.3 | 8.1 | 8.5 | 8.5 | 7.3 | 7.2 | n.a. | n.a. |

- The number of industry interventional trials initiated in the UK has declined in recent years; whilst there has been some recovery in the past two years post COVID, activity has not yet returned to pre-pandemic levels
- Reports from ABPI, NIHR and CRC suggest that this reduced activity may be attributed to unfavourable local conditions for conducting trials and potential cost-savings from conducting trials elsewhere
  - the average time for trial approval to delivery of the first dose increased from 222 to 247 days (2018 to 2020); this delay is likely due to slow costing and contracting
  - NIHR data suggests that fewer than half of industry trials in the UK recruit their target number of participants
  - according to the CRC, UK clinical trial costs are the highest in Europe, making CEE, India, and China more attractive for clinical trials from a cost perspective

Note: * Includes UK, Germany, France, Italy, Spain, Poland, USA, Canada, Australia, Japan, China, Brazil, South Africa, Switzerland, Belgium, Hungary

Source: ABPI, (2024). The road to recovery for UK industry clinical trials; ABPI, (2023). Getting back on track: Restoring the UK's global position in industry clinical trials; ABPI, (2022). Rescuing patient access to industry clinical trials in the UK; UK Clinical Research Collaboration, (2014). Clinical research in the UK; Frontier Economics (2024). 'The value of industry clinical trials, extended report' commissioned by The Association of the British Pharmaceutical Industry; Downing et al., (2016). Gut BMJ; Quotient Sciences, (2025). Restoring the competitiveness of UK phase 1



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# Clinical trials play an important role in the UK economy, providing patients with early access to treatments, promoting uptake of innovative therapies, and enhancing broader health outcomes

## Clinical trials are critical to providing patients with early access to treatments that may improve, extend or save their lives

- In 2023/24, 22,191 participants were recruited to interventional industry studies in the UK
  - many of these patients were therefore able to access treatments that otherwise would not have been available to them
- Research by Schwarz et al., (2021) demonstrated that patients involved in clinical trials may come under an increased level of scrutiny by doctors
  - this results in improved clinical management and therefore better patient outcomes

## NHS doctors who participate in clinical research are more likely to promote the uptake of innovative therapies once they are approved

- Researchers often gain familiarity with novel, innovative treatments through clinical trials
  - this speeds up adoption of novel therapies in clinical practice, once they are approved
  - research-active doctors often propagate their knowledge within their hospital or network to educate others, further accelerating the use of novel therapies
- In addition to accelerating the uptake of innovative therapies, research-active doctors tend to be more aware of the latest and best care processes for their patients

## Research-active NHS Trusts tend to provide better patient outcomes vs. non-research-active Trusts

- Institutions participating in clinical trials as research-active sites tend to have better patient outcomes
  - Downing et al., (2016) found that 5-year survival rates for colorectal cancer patients were c.10% higher in NHS Trusts that were considered research-active for 4 out of the 8 studied years
- A study by Jonker et al., (2019) found that patients admitted to research-active hospitals have more confidence in their treating physicians
  - these patients are also better informed about their condition and treatment

Note: * for 4 out of the 8 studied years

Source: Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report (2023); Schwarz et al., (2021). Clin Med; Jonker et al., (2019). Journal of Evaluation in Clinical Practice; Boaz et al., (2015). BMJ; Downing et al., (2016). BMJ



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# The current level of industry interventional clinical trials activity is estimated by Frontier Economics to contribute c.£6-7bn of GVA to the UK Economy …

*DIRECTIONAL*

| Industry clinical trial contributions to UK GVA | | Description | 2023 GVA (£bn) |
|---|---|---|---|
| Direct, indirect, & induced effects | Private sector activity | • Considers the impact of industry investment into the UK to carry out clinical trial activity; an income approach* is used to calculate GVA<br>• Indirect impact in terms of the increase in demand on suppliers and induced impact leading to an increase in the level of household income, which is then spent on goods and services is also considered | 3.9 |
| | NHS activity | • The pharmaceutical industry also contracts NHS providers to deliver clinical trials<br>• Considering the payment per patient and number of patients recruited onto interventional trials, the estimated NHS revenues from industry trials can be calculated<br>• Based on payroll as a share of expenditure in NHS Trusts, the direct GVA can be calculated | 0.9 |
| Spillover effects of R&D | | • R&D activity generates "spillover effects", which allows the knowledge, products, and processes created during scientific research to be used by other companies<br>• This spreads the benefits of innovation beyond the organisation originally carrying out the research to contribute to wider growth of the economy | 0.9 |
| Impacts of a healthier population | | • Publications from the Royal College of Physicians demonstrate that research-active institutions have better patient outcomes, and patients within these institutions benefit from earlier access to new therapies<br>• In addition to improving patient outcomes, this supports a healthier population and increases productivity by reducing absenteeism | 0.9 |
| | | Total GVA | 6-7 |

Note: *Assumes total payroll cost corresponds to the value added + associated profit margin

Source: Frontier Economics (2024). 'The value of industry clinical trials, extended report' commissioned by The Association of the British Pharmaceutical Industry; ONS BERD (2023); 2024 PhRMA Annual Membership Survey; ONS CPIH; Frontier Economics, (2023). Rate of return to investment in R&D



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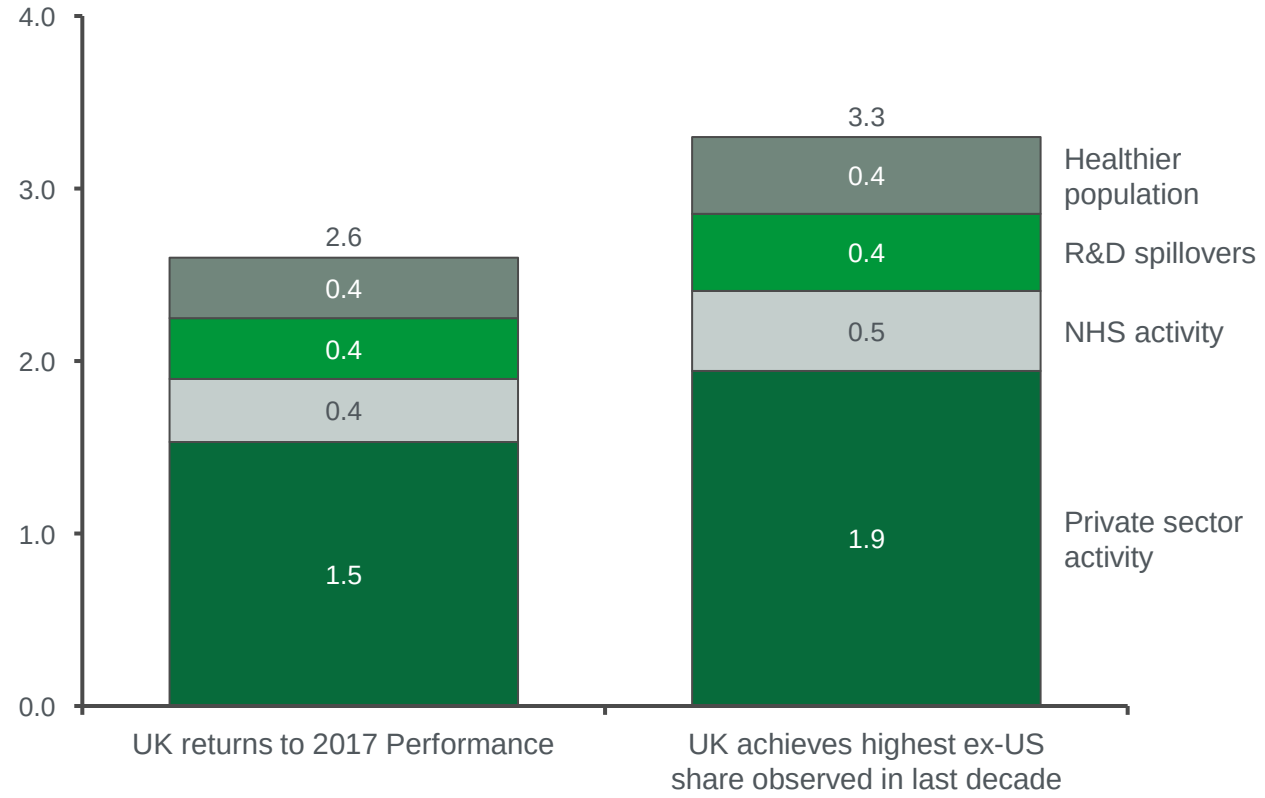
# … indicating that - were the UK to return to its historical peak level of performance in the global market for clinical trials - the estimated potential annual uplift in GVA would be c.£2.6bn p.a.

**NHS value opportunity – incremental GVA impact**
Billions of GBP




- Returning the UK to its c.2017 share of the global clinical trials market would drive significant value into the UK economy:
  - Creation of high-value jobs
  - Corporate profits generated within the UK economy
  - Increased health of the UK patient population, and consequent reduction in (e.g.,) sick days within the UK economy
  - R&D spillovers as the IP created in the UK sees diffuse use in other areas of the economy
- Were the UK to return to its 2017 level of performance in the global market for clinical trials, it is estimated that this would yield a potential annual uplift in GVA of c.£2.6bn
  - However, if the UK achieves the highest share achieved by a non-U.S. nation in recent history, this may yield a potential c.£3.3bn GVA uplift p.a.

Source: Frontier Economics (2024). 'The value of industry clinical trials, extended report' commissioned by The Association of the British Pharmaceutical Industry; Quotient Sciences, (2025). Restoring the competitiveness of UK phase 1; Lord O'Shaughnessy (2023). Independent report: Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report

# The unique characteristics of the NHS, such as its centrally coordinated structure, access to extensive data, and commitment to innovation, could prove attractive in driving clinical trial investment to the UK

## Role of NHS in attracting investment in the UK Life Sciences Economy

### Unified and centrally coordinated system

The NHS is one of the world's largest publicly funded healthcare systems, providing a single point of access to >60mn patients

- Companies can leverage the NHS's centralised structure to efficiently deploy, run, and manage clinical trials
- The NHS's access to a large population also provides companies with access to a broad and representative patient base

### Extensive data and digital infrastructure

With >60mn registered patients, the NHS has access to one of the most comprehensive healthcare datasets globally

- The growing use of digital records (e.g., EHRs) provide an invaluable dataset for companies
- The extensive data available in the NHS can support advanced analytics, clincal research, and real-world studies to benefit Life Sciences companies

### Commitment to research and innovation

As part of the Long-Term Plan, the NHS has committed to supporting research and innovation to drive future outcomes improvement

- The NHS has committed to increasing the number of people registered to participate in health research*, and to reducing barriers to conducting clinical trials in the UK
- These commitments demonstrate a willingness by the NHS to collaborate with industry to develop novel, innovative therapies

Note: *As part of the NHS Long-Term plan, it has committed to increasing the number of people registering to participate in health research to one million in 2023/24
Source: NHS England, (2024). Research in the NHS; NHS, (2019). The NHS Long Term Plan; Peckham, (1999). The Lancet; Mirror, Mirror 2017: The Commonwealth Fund, International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care



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# Whilst recent reviews have explored the steps required to support growth, the Life Sciences industrial community highlight areas where discrete further action is needed

## Decline in UK Clinical Trials

The May 2023 O'Shaughnessy review set out 27 recommendations, focused on driving growth in Clinical Trials:

1. Streamlining clinical trial **contracting, set-up, and approval** processes
2. Improving **transparency & accessibility** of data on clinical trials activity
3. **Establishing clear KPIs** to address underperformance in clinical trials
4. Embedding **research activities in the NHS** as part of decision-making
5. Introducing **incentives to encourage clinician participation**
6. Increasing **public awareness** of clinical trials and **embedding research discussions** in day-to-day care
7. Maximising use of the **NHS's vast data resources** for research
8. Expanding the **role of primary care** in clinical trial delivery

***In addition, the following further recommendations should be considered***

- Appointing a senior lead to take responsibility for **driving the O'Shaughnessy recommendations to fruition**
- Reinstating the **commitment to 14 days approval** for Phase 1 Clinical Trials
- Accelerating initiatives to **promote Phase 3 clinical trials** to be delivered in the UK
- **Adapting the MHRA's approach** to better align with, and potentially adopt, global regulatory standards to allow greater relative focus on innovation

Source: Harrington Review of Foreign Direct Investment (2023); Lord O'Shaughnessy (2023). Independent report: Commercial clinical trials in the UK: the Lord O'Shaughnessy review - final report



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# Conclusions

In characterising the competitiveness of the UK landscape, this first report in our series has highlighted that an estimated potential c.£15bn p.a. gap has emerged in the GVA of the UK Life Sciences Sector over the past ten years, as the UK's competitiveness in international markets has apparently declined:

During peak periods, the UK has in the past ranked 2nd in attracting Life Sciences FDI. It has now fallen to 8th, trailing the USA, Germany, France, India, China, Ireland, & Singapore; were the UK to rank 3rd consistently in attracting FDI, it would drive an **estimated c.£1.1bn p.a..** incremental investment

- The UK's global share of pharmaceutical exports has dropped from 7.3% in 2013, to 5.4% in 2018, and to 3.8% in 2023; were the UK to return to its 2018 share, this would drive an estimated incremental **GVA of c.£10.8bn p.a.**, across direct, indirect, and induced benefits

- Relatedly - whilst the UK sector has had broadly flat employment in pharmaceutical manufacturing in the last decade, the rest of Europe has grown its employment by 20% in this area; were the UK to have grown in line with Europe, it would support an estimated incremental **10k jobs in manufacturing**

- Industry interventional clinical trials initiated in the UK have decreased by c.8% p.a. since 2017/18, representing a loss in global share; where the UK to return to its 2017 level of performance, it would result in an estimated incremental **GVA of c.£2.6bn p.a.**

Part 2 of this report will explore a set of potential **further opportunities to amplify growth** and unlock greater economic benefit for the Life Sciences in the UK.

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