



Office for  
Life Sciences

# BIOSCIENCE AND HEALTH TECHNOLOGY SECTOR STATISTICS 2020

December 2021

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# Biotechnology and Health technology Sector Statistics 2020

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## Key Messages

The UK life sciences industry employed 268,000 people across 6,330<sup>1</sup> businesses and generated a turnover of £88.9bn in 2020.

The Core Biopharma and Core Med Tech sectors contain businesses involved in the discovery, development and marketing of therapeutics, and medical devices respectively. The Core Med Tech sector is the largest by employment (106,500 or 40% of the industry) and Core Biopharma is the largest by turnover (£40.7bn or 46% of the industry).

The Core sectors are supported by two Service & Supply sectors that supply materials, equipment and specialist services. These two sectors employ 95,500 people across 2,780 businesses with a turnover of £26.2bn.

The largest segment within the industry is Small Molecules, consisting of businesses with the majority of their activity developing and marketing therapeutics based on this technology. The segment employs 49,800 (19% of the industry) and generates a turnover of £34.9 bn (39% of the industry total).

Along with Small Molecules, the Top 3 Core segments in the industry by employment include Digital Health (the largest segment by employment in Core Med Tech with 14,400 employees) and Single Use Technology (9,900 employees). The Top 3 Core segments in the industry by turnover are Small Molecules, Single Use Technology, and Therapeutic Proteins. In total these segments account for 44% of industry turnover.

Within the two Service & Supply sectors, the two largest segments are Reagent, Equipment and Consumables Suppliers and Contract Manufacturing and Research Organisations. In Biopharma, these two segments employ 32,800 with a turnover of £13.1bn; in Med Tech, these segments employ 12,800 with a turnover of £2.5bn.

85% of the businesses in the industry are SMEs<sup>2</sup>; these employ 24% of the industry total and generate 10% of the turnover. The Core Biopharma sector has a higher percentage of non-SME businesses at 27% compared to 14-16% for all other sectors. The Top 25 Global Pharmaceutical companies with activity in the UK (and are non-SMEs) employ 51% of the Core Biopharma sector.

The South East contains the largest proportion of life sciences industry jobs with a total employment across all four sectors of 64,800 or 24%. Completing the Top 3 regions by employment are the East of England (39,200) and London (28,700).

Employment in the Core Biopharma sector is concentrated in the South East, East of England and London, with 67% (44,200) of all Core Biopharma sector employees. Core Med Tech is

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<sup>1</sup> There are 80 businesses that are active in both of the principal sectors (Biopharma and Med Tech). See the Bioscience and Health Technology Sector Statistics – User Guide for more information on business counts.

<sup>2</sup> Companies are categorised as SME or non-SME using the [European Union standard definition of small and medium-sized enterprises](#). For a small number of records (0.4%) it is not possible to classify businesses as SMEs or non-SMEs. These 'unclassified' businesses are excluded from both the SME and non-SME totals.

less concentrated in these regions, with the South East, East of England and London accounting for 41% (43,700) of Core Med Tech employment.

## Trend Data

Between 2011 and 2020, the industry increased employment by 31,500, an increase of 13% at a compound annual growth rate of 1.4%. Over the period, all sectors except for Core Biopharma increased employment. This is compared to employment growth in all industries<sup>3</sup> of 12% since 2011 at a CAGR of 1.3%.

The employment decreases in Core Biopharma (3,500 in total over the period) were concentrated between 2011-2012, when a number of the large pharmaceutical companies underwent re-structuring.

Total industry turnover increased in real terms<sup>4</sup> by £1.1bn between 2011 and 2020, which was generated by a combined increase of £9.2bn across both Service & Supply sectors and Core Med Tech, which offset an £8.1bn decrease in the Core Biopharma sector.

Between 2011 and 2020, the top 2 core segments by employment remained Small Molecules and Digital Health, whilst the Single use technology segment replaced In vitro diagnostic technology as the third biggest employer. The fourth largest employer, Orthopaedic Devices, has been replaced by In vitro diagnostic technology, whilst Assistive Technology remains the fifth largest in the industry's top 5 core segments by employment. By turnover, Digital Health and In vitro diagnostics have replaced Vaccines and Orthopaedic Devices in the Top 5 core segments over the same period. Therapeutic Proteins moved from fifth to third, and Digital Health replaces Orthopaedic Devices as fourth largest in the list. In vitro diagnostics is the fifth largest by turnover in 2020.

Between 2011 and 2020, most regions in the UK have seen a net increase in employment in the life sciences industry. One region in England, the West Midlands, saw employment fall by 800.

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<sup>3</sup> UK employment (all industries) taken from Office for National Statistics HI00 Regional labour market: [Headline Labour Force Survey indicators for all regions 16<sup>th</sup> November 2021 release](#)

<sup>4</sup> Deflated turnover calculated using Office for National Statistics deflators to bring turnover values to 2020 equivalent values. [GDP Deflators Spring Statement 2021 update issued 3<sup>rd</sup> March 2021](#)

## Introduction

This report contains analysis of trends in the UK life sciences industry, covering the Biopharma and Med Tech principal sectors<sup>5</sup>. The three main measures of economic contribution and industry structure are:

- employment - the number of people employed by life science businesses
- turnover - the amount of money taken by businesses within scope of life science sector activities
- number of businesses – the number of life science businesses and their sites registered in the UK

It contains analysis of the industry looking at the economic activity of businesses that market therapeutic products and medical devices as well as the specialist Service & Supply chains that are key parts of the ecosystem. A segmentation approach is applied that enables a detailed analysis of the product and service categories that make up the industry<sup>6</sup>.

The analysis is based on the 2020 database of sites and businesses, updated in 2021 using the methodology summarised in the user guide.

Employment and turnover figures presented in each edition of this statistical series are the most recent figures available at the time of data sampling. This sampling captures financial information filed at Companies House in the reporting year. In 2020, companies were given a three-month extension to the reporting period, from December 2020 to March 2021, as a one-off action in response to the Covid-19 pandemic. To ensure sampling for this issue of the report is in line with previous issues the sampling window was also extended by three months.

The user guide that accompanies this document, together with the data, charts, figures, maps and infographics can be found on the [Bioscience and health technology sector statistics](https://www.gov.uk/government/statistics/bioscience-and-health-technology-sector-statistics) gov.uk page.

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<sup>5</sup> The data does not include industrial biotechnology, animal health, not-for-profit organisations, public funded institutions or universities. From 2020 it also excludes unincorporated businesses.

<sup>6</sup> See the accompanying user guide for a list of the segmentation categories

## Terminology

**Industry:** used to collectively describe all Sectors covered in the analysis

**Principal Sector:** The top level of the segmentation scheme used to describe Biopharmaceuticals and Medical Technology

**Sector:** used to describe Core Biopharma, Core Med Tech, Biopharma Service & Supply or Med Tech Service & Supply

**Segment:** used to describe the individual product or service groups within a Sector (see User Guide for a detailed list of segments)

**Core Biopharma:** includes all businesses involved in developing and/or producing their own pharmaceutical products - from small, research and development (R&D) focused biotechs to multinational Big Pharma

**Biopharma Service & Supply Chain:** comprises businesses that offer goods and services to Core Biopharma businesses including, for example, Contract Research and Manufacturing Organisations (CRMOs), and suppliers of consumables and reagents for R&D facilities

**Core Med Tech:** includes all businesses whose primary business involves developing and producing Med Tech products, ranging from single-use consumables to complex hospital equipment, including Digital Health products

**Med Tech Service & Supply Chain:** comprises businesses that offer services to Core Med Tech businesses including, for example, CRMOs, and suppliers of consumables and reagents for R&D facilities

**Digital Health:** includes businesses involved in making products for both hospitals and consumers including products such as hospital information systems and mobile medical devices and apps. It is a segment wholly within the Core Med Tech Sector.

**Genomics:** an interdisciplinary field focusing on the study of the human genome and the application of resulting knowledge to human health. It is a cross-cutting categorisation across all four sectors.

**Business:** used to describe an entity that is the legal owner of a group of trading addresses or sites and legal entities. A business may consist of more than one site or registered company. The term business is used in this document when discussing the whole life sciences industry and the four sectors.

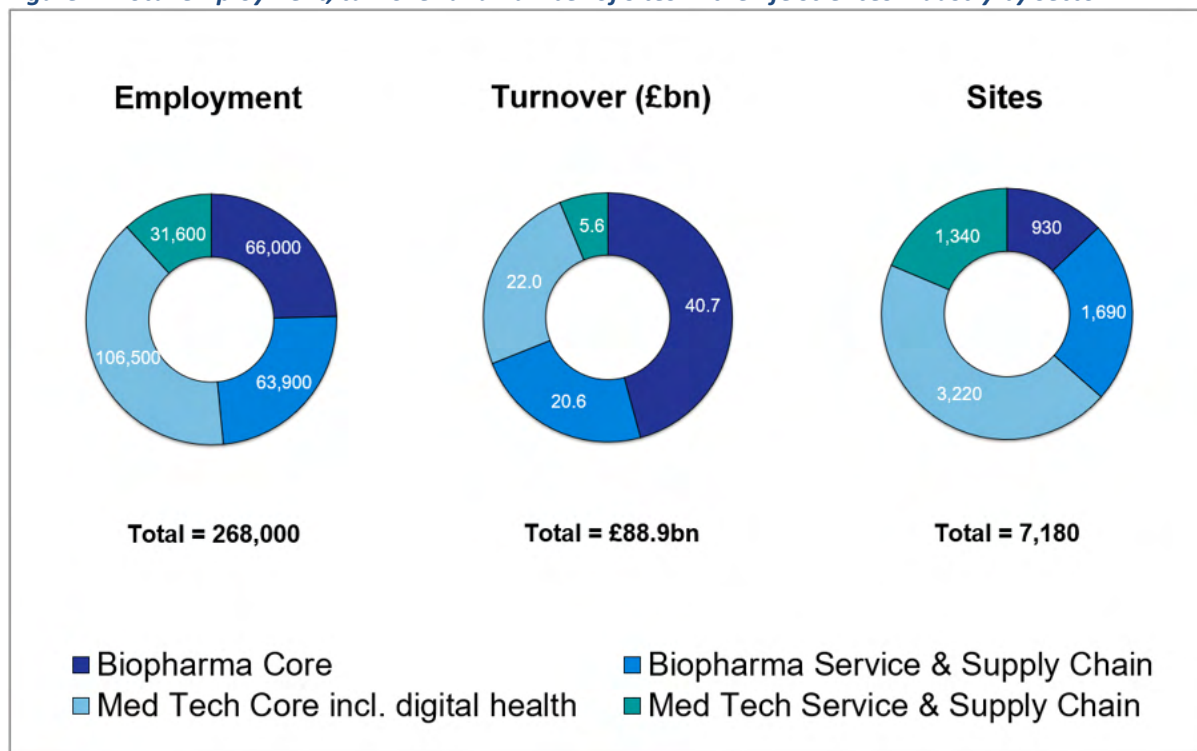
There are 80 businesses that are active in both of the principal sectors (Biopharma and Med Tech). The User Guide explains business counts in more detail.

**Sites:** used when referring to the data at the segment or geographical level. All data in the spreadsheets that accompany this document are analysed at the site level. This is the level at which all data entries (7,180 records) are held and analysed in the database. A single site is segmented and has employment and turnover assigned to it. As a business can have multiple sites and can operate in more than one segment, the total counts of sites at segment level is greater than the count of businesses referred to at sector level.

**SME status:** based on the [European definition of Small and Medium-sized Enterprises](#) (SMEs) and refers to businesses with fewer than 250 employees and which either have annual turnover up to and including €50m and/or have an annual balance sheet total up to and including €43m. For a small number of records (0.4%) it is not possible to classify businesses as SMEs or non-SMEs. These 'unclassified' businesses are excluded from both the SME and non-SME totals.

# 1. Industry overview

Figure 1: Total employment, turnover and number of sites in the life sciences industry by sector



The life sciences industry employs approximately 268,000 people in the UK. Approximately 138,100 (52% of the industry total) are employed in the Med Tech sector comprising the Core Med Tech and the Service & Supply Chain segments. The Core Med Tech sector is the largest in the industry by employment and number of businesses with a total employment of 106,500 (40% of the industry) and 2,900 businesses (46% of the industry).

The Digital Health segment is included in the Core Med Tech sector and is the largest segment in this principal sector with 14,400 employees (13% of Core Med Tech) and the second largest in the Core sectors by employment.

The Core Biopharma sector contributes the largest turnover to the industry at £40.7bn (46% of the industry). This turnover is generated from 770 businesses (12% of the industry). Within the Core Biopharma sector, the Top 25 global pharmaceutical<sup>7</sup> companies by revenue make up 57% of this turnover (£23.0bn) and employ 51% (33,600) of the Core Biopharma employees.

The Service & Supply Chain companies that support the Core Biopharma and Med Tech sectors have a combined employment of 95,500 compared to 172,500 for the two Core sectors. Turnover for the combined Service & Supply Chain sectors is £26.2bn compared to £62.7bn for the combined Core sectors.

<sup>7</sup> [Pharm Exec's Top 50 Companies 2020](#)



## 1.1 Core sectors

The two Core sectors of the industry include an estimated 3,640 businesses (30 of which operate in both core sectors), with the majority in the Med Tech sector (80%). The businesses that operate in these two sectors focus on the discovery, development and marketing of new therapies and medical devices.

- On average, a business operating in the Core Biopharma sector business has a turnover seven times that of a Core Med Tech business and employs twice as many people.
- 31% of Core Biopharma sites have a turnover greater than £5m compared to 19% for Core Med Tech.
- 8% of Core Biopharma sites have 250 or more employees compared to 2% for Core Med Tech.

The global Top 30 Core Med Tech businesses by revenue<sup>8</sup> employ 17% of the total Core Med Tech sector and their revenue accounts for 28% of the sector total.

The global Top 25 Core Biopharma businesses by revenue<sup>9</sup> employ 51% of the total Core Biopharma sector and their revenue accounts for 57% of the sector total.

The largest segment in the Core Biopharma sector by employment is small molecules, employing 76% of the Core Biopharma sector. Digital Health, in contrast, is the largest segment within Core Med Tech and employs 13% of the sector total.

The five largest employment segments in the two Core sectors combined employ 93,100 or 54% of the total in the Core sectors. Of the five largest segments, all but small molecules are segments within Core Med Tech. The top five segments in the two Core sectors by turnover are Small Molecules, Single use technology, Therapeutic Proteins, Digital Health and In vitro diagnostics. Together they have a combined turnover of £42.8bn or 68% of the total Core sectors; £34.9bn of which is from the small molecules segment.

Of the businesses in Core Biopharma 72% are SMEs compared to 85% in the Core Med Tech sector.

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<sup>8</sup> The Top 30 ranking as based on [The 2020 Top 30 Global Medical Device Companies](#)

<sup>9</sup> The Top 25 ranking based on [Pharm Exec's Top 50 Companies 2020](#)

## 1.2 Service & Supply Chain sectors

Both the Core Biopharma and Med Tech businesses are supported by large specialist UK based Service & Supply Chain sectors.

The Biopharma Service & Supply Chain sector employs 63,900 people in 1,530 businesses (80 of which operate in more than one sector) and generates a turnover of £20.6bn. The largest segments by employment in this sector are contract manufacturing and research, reagent & equipment suppliers, and clinical research organisation that together employ 43,600 people and account for 81% (£16.7bn) of the sector turnover.

The Med Tech Service & Supply Chain sector employs 31,600 people in 1,290 businesses (70 of which operate in more than one sector), with a turnover of £5.6bn. The largest segments in this sector by employment are reagent & equipment suppliers, contract manufacturing and research, and specialist consultants (excluding regulatory) that together employ 17,000 people and account for 54% (£3.0bn) of the sector turnover.

## 2. Sector overviews – Key facts

### 2.1 Biopharma sector

- In total, the Biopharma sector employs 129,900 people; 66,000 in Core Biopharma businesses and 63,900 in Service & Supply businesses. The combined turnover of the sector is £61.3bn.
- Regionally, employment in the Biopharma sector is concentrated in the South East, East of England, London, North West, and in Scotland.
- Large non-SME businesses are the major employers in Core Biopharma (91% of all employment in the sector). In the Biopharma Service & Supply Chain sector, the majority (86%) of the businesses are SMEs and employ 23% of the sector.

### 2.2 Biopharma – Core businesses

**Overall** the Core Biopharma sector contains 770 businesses that operate in the sector (50 of which operate in more than one sector), employing 66,000 people and a turnover of £40.7bn in 2020.

**The sector breakdown** shows that businesses whose main economic activity involves Small Molecule therapeutics form the largest segment, accounting for 62% (580) of sites, 76% of employees (49,800) and 86% (£34.9bn) of turnover in the sector. Therapeutic Proteins, Antibodies and Vaccines are the next largest segments by turnover, together making up 18% (12,000) and 11% (£4.6bn) of employment and turnover respectively.

**Geographical analysis of employment** shows Core Biopharma businesses in all areas of the UK with the greatest concentration in the South East, East of England, London, and the North West which together account for 80% (53,000) of Core Biopharma employment.

**Analysing the size of the businesses** shows 27% (210) of Core Biopharma businesses are non-SMEs. These large businesses employ 60,100 people (91% of Core Biopharma employment) and account for £39.4bn of turnover (97% of Core Biopharma turnover). They represent 44% of total life sciences industry turnover and 22% of employment.

## 2.3 Biopharma – Service & Supply Chain

**Overall** the Biopharma Service & Supply Chain sector contains 1,530 businesses that operate in the sector (80 of which operate in more than one sector), employing 63,900 people with a turnover of £20.6bn in 2020.

**The sector breakdown** shows the largest employing segment is Contract Manufacturing and Research Organisations that consist of 380 sites employing 20,100 people. The largest segment in terms of turnover is Reagent & Equipment Suppliers, which represents 42% (£8.7bn) of the total. Clinical Research Organisations completes the Top 3 Biopharma Service & Supply Chain segments; in total the Top 3 account for 68% (43,600) of the employment.

**Geographical analysis of employment** shows the South East accounts for the highest number of Biopharma Service & Supply Chain businesses (323) and employees (16,300). The East of England has the next highest number of employees in the sector (9,912, 26%), followed by Scotland (6,000, 9%), the North West (5,834, 9%) and London (5,639, 9%) .

**Analysing the size of businesses shows** that the Biopharma Service & Supply Chain sector is predominately composed of SMEs (1,310) that make up 86% of businesses in the sector, yet they represent only 23% of employment (14,900 people) and 9% of turnover (£1.9bn) for the sector.

## 2.4 Med Tech sector (including Digital Health)

- In total, the Med Tech principal sector employs 138,100 people; 106,500 in Core Med Tech businesses and 31,600 in Service & Supply Chain businesses. The combined turnover of the Med Tech principal sector is £27.6bn.
- Med Tech employment is spread across the UK. For both the Core Med Tech and Service and Supply Chain sectors, the South East, London, and the East of England account for 41% of the employment, and 59% is located outside of these regions.
- SMEs in both Core Med Tech and Service & Supply Chain account for a similar proportion of businesses (85% and 84% respectively) and employment (31% and 35% respectively).

## 2.5 Med Tech – Core businesses

**Overall** the Core Med Tech sector contains 2,900 businesses that operate in the sector (80 of which operate in more than one sector), employing 106,500 people with a turnover of £22.0bn in 2020.

**The sector breakdown** shows the largest segment by turnover is Single use technology (£2.0bn) followed by Digital Health (£1.9bn), In vitro diagnostics (£1.9bn), Orthopaedic Devices (£1.8bn), and Assistive Technology (£1.6bn). These top five segments account for 42% (£9.2bn) of the Core Med Tech turnover. Digital Health technology is the largest segment

by employment (14,400) followed by Single use technology (10,000), In vitro diagnostics (9,900), Assistive Technology (9,100), and Orthopaedic Devices (8,100). These top five account for 48% (51,300) of sector employment.

**Geographical analysis of employment** shows there are Core Med Tech sites spread across the whole of the UK. Employment is less concentrated in the South East, East of England, and London (41% collectively) when compared to the Core Biopharma sector where 67% of employment is located in these regions. The second highest region by employment in the Core Med Tech sector is Yorkshire and The Humber, with 11,400 employees, 11% of the sector total.

**Analysis of the size of businesses** shows that 85% (2,450) of the 2,900 businesses that are active in Core Med Tech are SMEs. They represent 31% (33,400) of Core Med Tech employment and 20% (£4.4bn) of Core Med Tech turnover. Core Med Tech SMEs account for 46% of the total number of life sciences SMEs.

## 2.6 Med Tech – Service & Supply Chain

**Overall** the sector contains 1,290 businesses that operate in the sector (70 of which operate in more than one sector), employing 31,600 and generating a turnover of £5.6bn in 2020.

**The sector breakdown** shows the largest segment of the sector by employment and turnover is reagent, equipment and consumables suppliers, which has 330 sites and employs 24% (7,600) of the sector's total and generates 30% (£1.7bn) of its turnover. The next largest segments by employment are contract manufacturing and research followed by specialist consultants (which has the largest number of sites in the sector: 370).

**Geographical analysis** shows that the top 3 areas in terms of employment are the South East, the North West, and London. These three areas account for 47% (14,800) of the employment and 48% (£2.7bn) of the sector turnover.

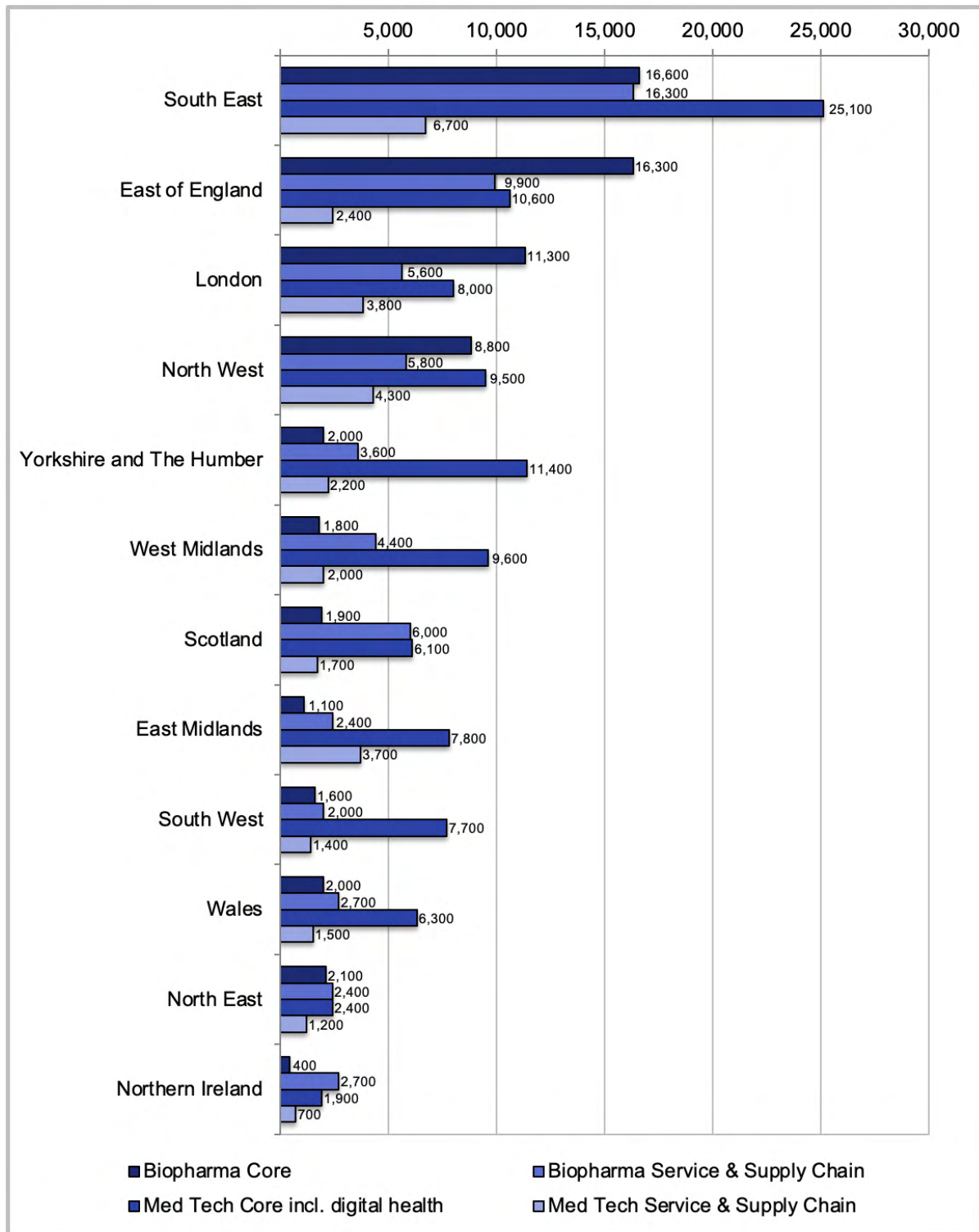
**Analysis of the size of businesses** shows that 84% (1,080) of businesses are SMEs, employing 11,000 people (35% of Med Tech Service & Supply Chain) and accounting for £1.4bn (25%) of turnover.

### 3 Geographical analysis

- The South East contains the largest population of life sciences industry jobs with a total employment across all four sectors of 64,800 (24%). The East of England and London together with the South East are the Top 3 regions by employment.
- The Core Biopharma sector is concentrated within the South East and East of England, particularly in an area stretching from Cambridge to Reading, and areas around Stevenage and in London. In the North West, Core Biopharma businesses are located along the corridor running from Liverpool to Manchester.
- Core Med Tech has concentrations of employment around the major cities in the Midlands and Yorkshire including Leeds, Sheffield, and Birmingham, as well as London and Reading.
- The Service & Supply Chain sectors' employment is distributed in a similar pattern to the sector they serve but less concentrated around the major conurbations.

The distribution of employment by sector is shown in Figure 2. The South East contains the largest population of life sciences industry jobs with 64,800 (24% of the industry) employed across all four sectors. The Top 3 regions by employment include the South East followed by East of England, and London. Together these regions contain 49% (132,700) of all life sciences industry employees.

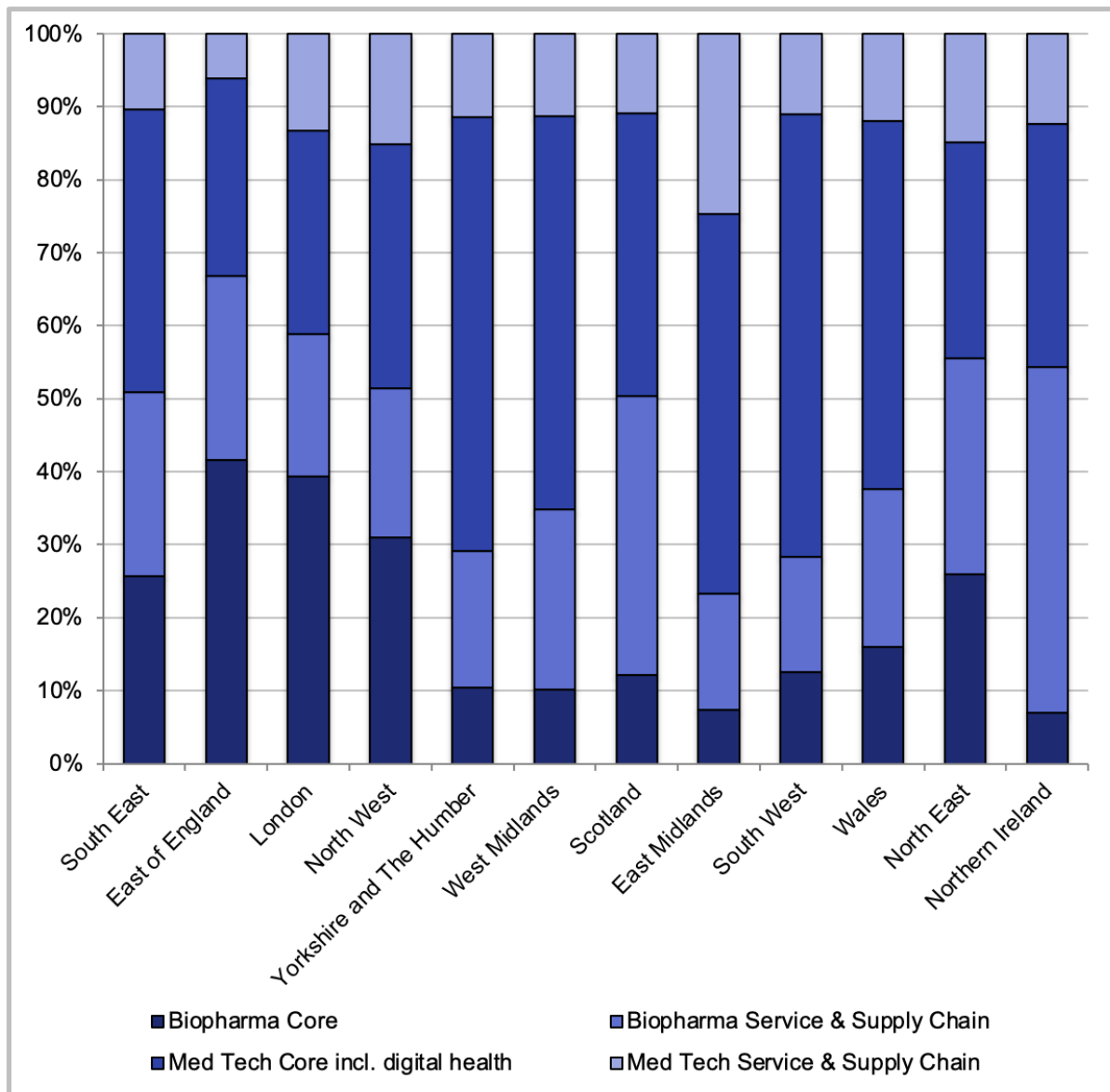
**Figure 2: The distribution of the industry employment by sector across the regions of England and in Northern Ireland, Scotland, and Wales**



The relative contribution of the four sectors to the overall life sciences employment in the regions is shown in Figure 3. The Core Biopharma sector has the highest proportion of total life science employment in both the East of England and London (41% and 39% respectively). The Biopharma Service & Supply Chain sector accounts for nearly half (47%) of life sciences employment in Northern Ireland and 38% of life sciences employment in Scotland.

Core Med Tech accounts for more than half of life sciences employment in East Midlands, West Midlands, Yorkshire and The Humber, Wales, and the South West; no region has Med Tech Service & Supply Chain employment greater than 25%.

**Figure 3: Regional employment in the life science sector displayed as a percentage of the total life sciences employment in the region**



Maps of the distribution of life sciences employment across the UK (Figures 4 and 5) give details on the location concentrations of employment.

### 3.1 Core Biopharma and Biopharma Service & Supply Chain sectors regionally

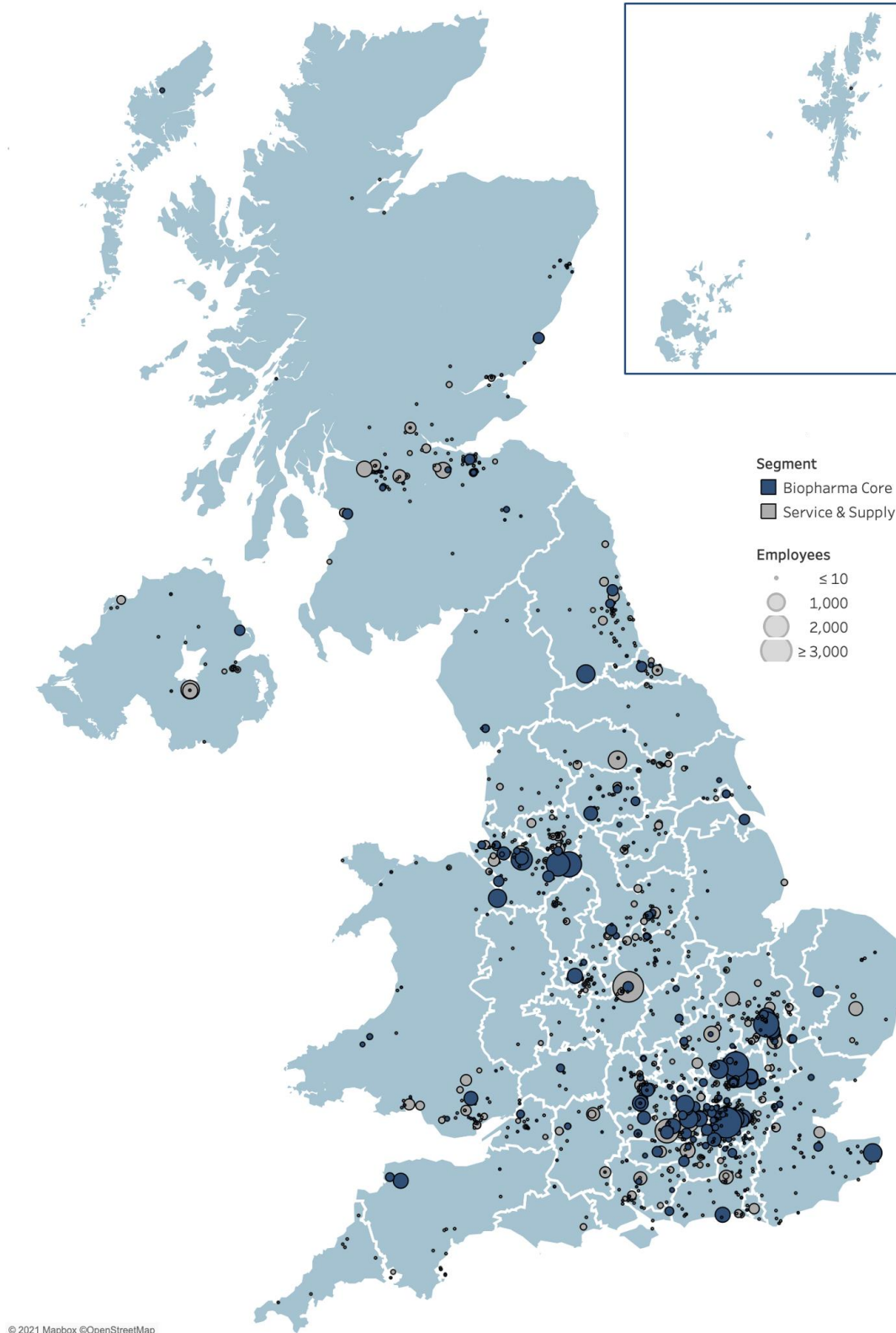
The Core Biopharma sector is concentrated within the South East and East of England, particularly in an area stretching from Cambridge to Reading including areas around Stevenage and in London. In the North West, Core Biopharma businesses are located along the corridor running from Liverpool to Manchester.

The Biopharma Service & Supply Chain sector is more widely distributed than Core Biopharma, with the Top 4 regions employing 60% of the sector (compared to 80% for Core



Biopharma). In particular, Scotland contains the third largest concentration of Biopharma Service & Supply Chain sector employment representing 9% of the sector total.

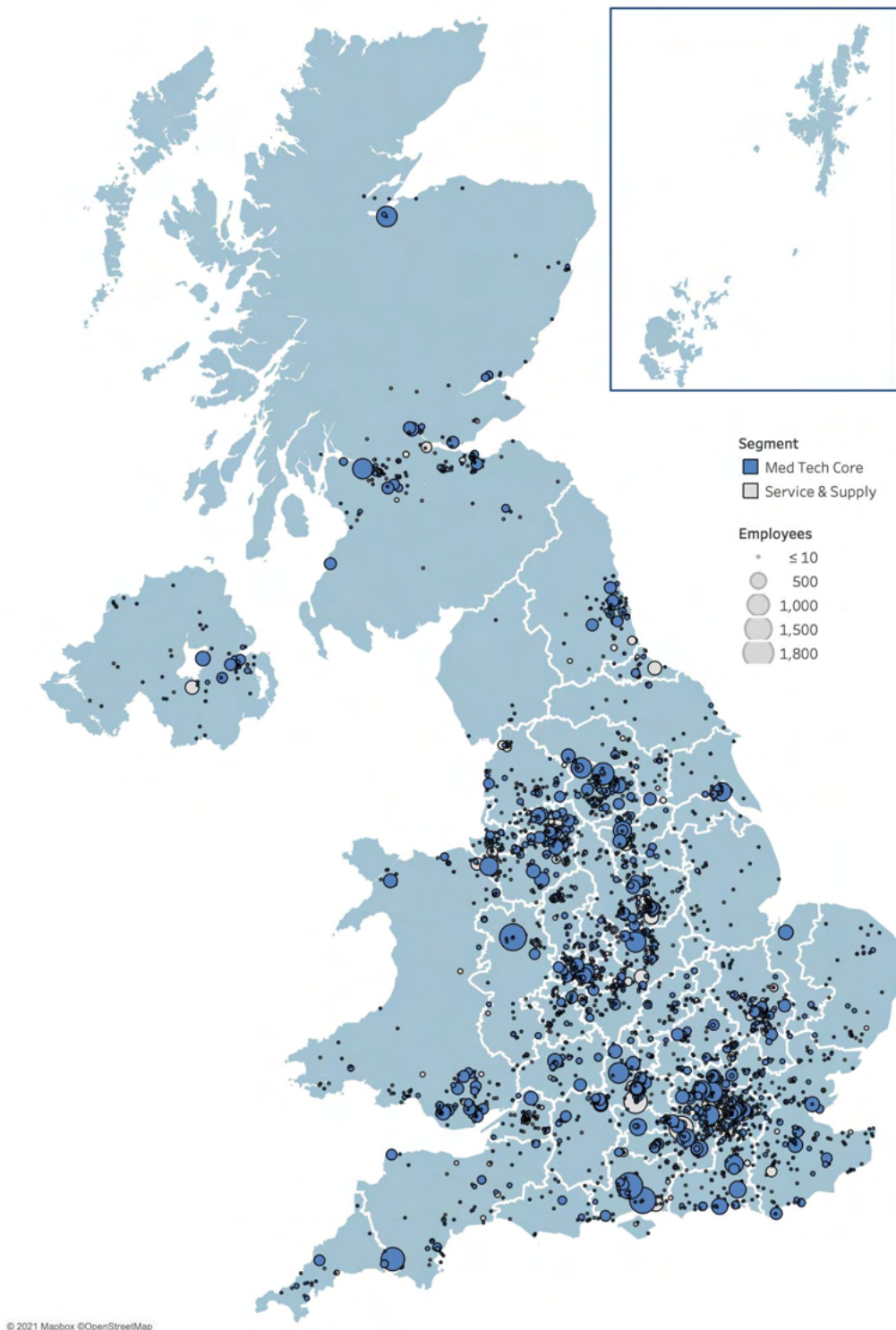
**Figure 4: Map showing the location and relative level of employment for the Core Biopharma and Service & Supply Chain sectors**



### 3.2 Core Med Tech and Med Tech Service & Supply Chain sectors regionally

The Core Med Tech and Service & Supply Chain sectors employment has concentrations of employment in areas around London and in the North West. In contrast to the Biopharma sectors, Core Med Tech has concentrations of employment around the major cities in the Midlands and Yorkshire including Leeds, Sheffield and Birmingham.

**Figure 5: Map showing the location and relative level of employment for the Core Med Tech and Service & Supply Chain sectors**



## 4 Digital Health and Genomics

- The Digital Health segment employs 14,400 people and has a total turnover of £1.9bn.
- Between 2011 to 2020, the segment has increased employment by 4,500 and turnover by £640m.
- Of the businesses where the formation date is known, 60% (400) of Digital Health businesses were formed in the last 10 years.
- The Top 3 regions for employment in the Digital Health segment are London, the South East and Yorkshire and Humber.
- Overall genomics related activity in the UK is located in 70 sites with 3,000 employees and a total turnover estimated at £2.4bn.
- The largest activity in the genomics segment is in sequencing businesses (sequencing services, consumables and instruments). These businesses employ 2,000 people and generate £2.2bn in turnover

### 4.1 Digital Health

**The Digital Health segment** is composed of 670 businesses (690 sites), the highest number of businesses for a Core segment in the life sciences industry. Digital Health employs 14,400 people and has a total turnover of £1.9bn.

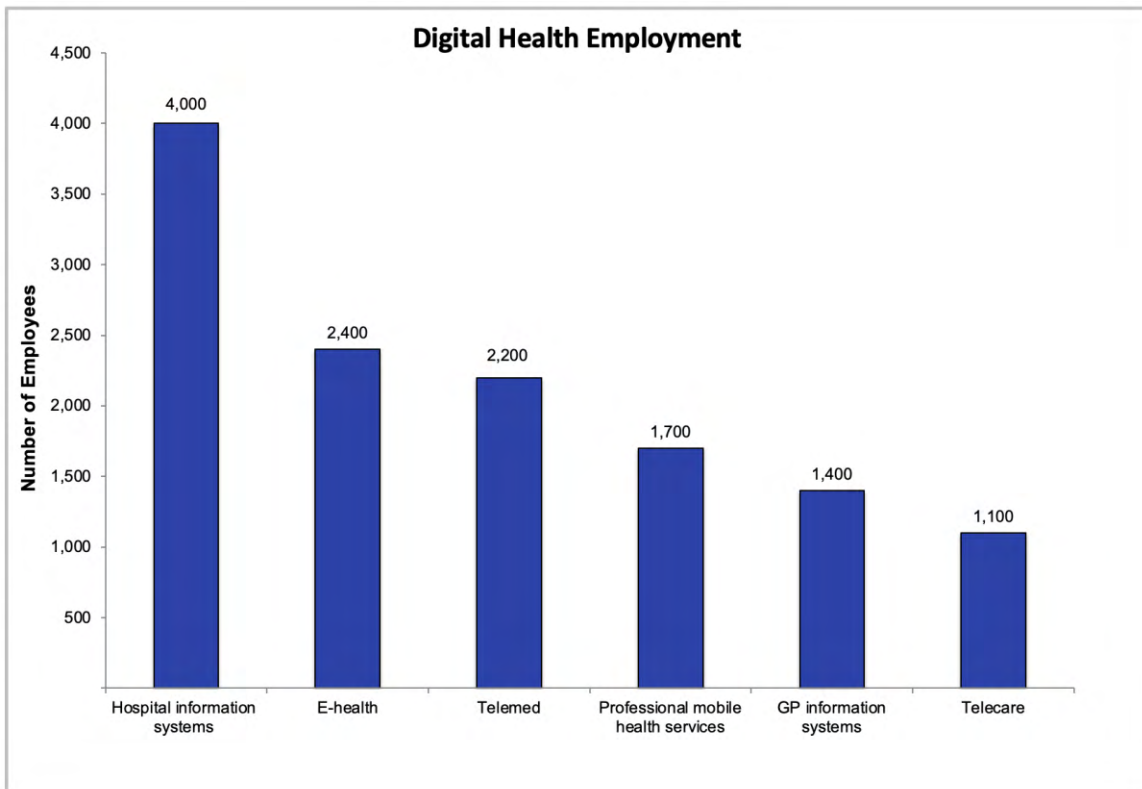
The estimated turnover and employment includes only businesses where a significant proportion (over 20%) of their economic activity is in Digital Health. This approach does not include all the economic activity associated with, for example, large diversified businesses where Digital Health is not their main activity.

**Geographically**, 29% of the sites are located in London along with 30% of the employment in the segment. The Top 3 regions for employment in the segment are London, the South East and Yorkshire and Humber. These regions together employ 57% of the segment.

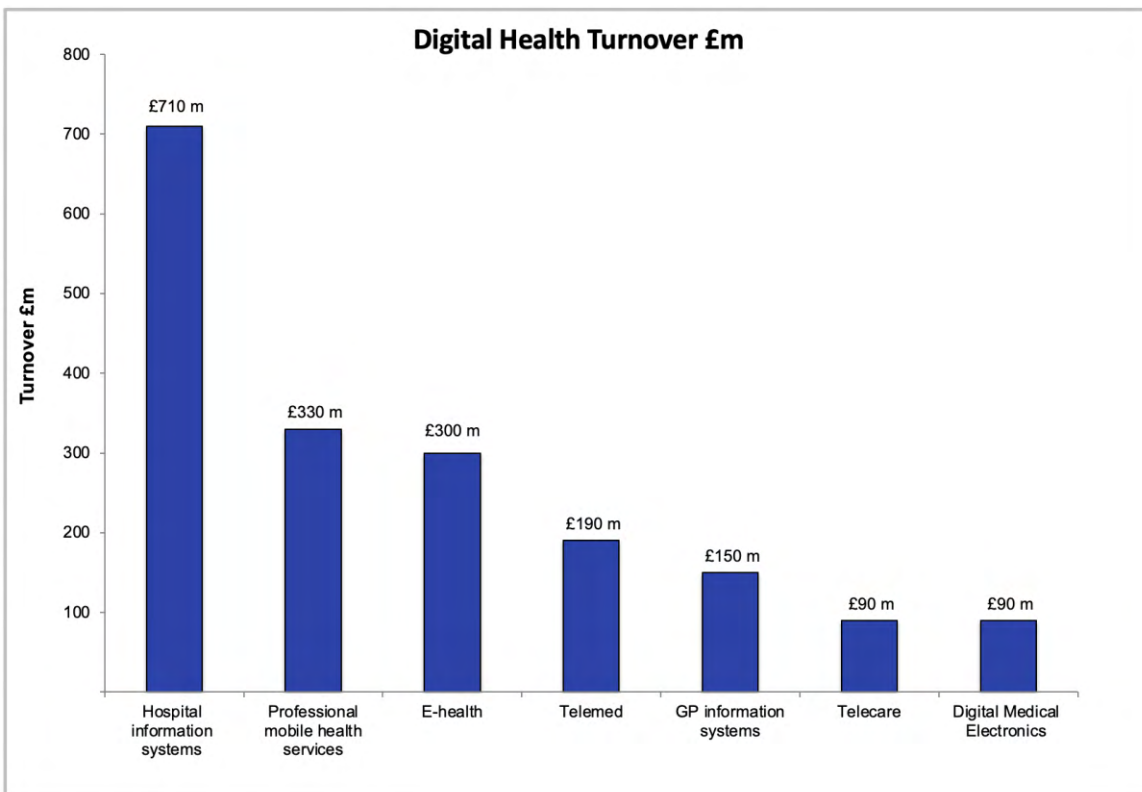
**Analysis of the sector breakdown** shows that, within Digital Health, Hospital information systems accounts for 36% (£710m) of turnover and 28% (4,000) of employment. The E-health Data Analytics and Medical Monitoring & Diagnostics are the next largest sub-segments by employment, and together the Top 3 sub-segments employ 8,600 people, or 60% of the segment.

**Analysis of the size of businesses** shows that 88% (590) of Digital Health businesses are SMEs and employ 36% of Digital Health jobs (5,200), contributing £420m in turnover (22%) of the Digital Health segment turnover.

**Figure 6: The distribution of employment for sub-segments of Digital Health (only segments with >1000 employees shown)**



**Figure 7: The distribution of turnover for sub-segments of Digital Health (only segments with turnover >£90m shown)**



## 4.2 Genomics

Genomics is an interdisciplinary field of science and technology focused on the study of genomes. In this analysis the focus is on the study of the human genome and the application of the resulting knowledge to human health. Since the instigation of the Human Genome Project in 2001, the field and its applications have grown. The global market for equipment, reagents, and services based on genomics was estimated at over £8bn in 2015 and is forecast to grow rapidly.<sup>10</sup>

**Overall genomics related activity** in the UK is located in 70 sites with 3,000 employees and a total turnover estimated at £2.4bn<sup>11</sup>. Between 2017 and 2020 the activity has increased employment by 900 and turnover by £0.5bn.

**The largest activity in the field** is in sequencing services, consumables and instruments businesses that employ 2,000 and generated £2.2bn in turnover. Within this segment, sale of instruments is the largest activity by turnover, employing 600 (21% of the genomics total) and generating a turnover of £2.0bn (83% of the genomics total).

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<sup>10</sup> [Genomics in the UK, Deloitte study for the Office of Life Sciences, Sept 2015](#)

<sup>11</sup> The economic activity is based primarily on businesses that have the majority of their activity in the sector either selling equipment, reagents or services. The analysis does not include in-house use or application of genomics, for example for drug discovery & development

## 5 Manufacturing activity

There are 2,010 sites involved in the manufacture<sup>12</sup> of life science products across the UK, employing 111,200 people and generating £31.7bn in turnover. Of these, 60% are in the Core Med Tech sector, accounting for 51% of employment across manufacturing sites. Core Biopharma is the sector which generates the greatest amount of turnover from manufacturing sites (£12.0bn, or 38% of the total), despite contributing just 8% of the sites and 23% of the employment. The two service and supply sectors combined account for 26% of employment at life science manufacturing sites, and 28% of turnover (the majority of which can be attributed to the Biopharma Service and Supply sector).

**Table 1: Employment, turnover and number of sites for UK life science manufacturing in 2020**

Sector	Employment	Turnover (£bn)	Number of Sites
Biopharma Core	25,900	12.0	170
Biopharma Service & Supply	19,300	7.1	340
Med Tech Core	56,200	10.7	1200
Med Tech Service & Supply	9,800	1.9	310
<b>Total</b>	<b>111,200</b>	<b>31.7</b>	<b>2,010</b>

The top region for both employment and turnover is the South East, employing 25,000 people at life science manufacturing sites (23% of the total for manufacturing sites) and generating £7.6bn in turnover (24% of the total for manufacturing sites).

All other regions of the UK account for 86,200, or 77%, of employment at manufacturing sites, and £24.0bn, or 76%, of turnover at manufacturing sites. This is compared to 203,241, or 76%, of employment and £63.0bn, or 71%, of turnover outside the South East for the life sciences sector as a whole.

The next most significant contributions to employment and turnover from manufacturing sites after the South East are from the East of England, employing 13,500 people and generating £6.2bn, the North West, employing 11,400 people and generating £4.6bn turnover, and Yorkshire and the Humber, employing 11,400 and generating £2.5bn turnover.

<sup>12</sup> Here, a 'manufacturing site' refers to any site in the database where manufacturing activities take place (any site with the Business Activity Code 'BAB'). Some of these sites will undertake types of work in addition to manufacturing, and therefore the number of employees and turnover from these sites includes contributions from non-manufacturing activities. Please see the User Guide for more details on Business Activity Codes.

## 6 Company Ownership

The data sources used to compile this report contain information on the ultimate global owner of the businesses in the database. This information is available for 71% of the records in the database. However, the businesses where the owner origin is not known account for a small proportion of industry employment (17,100, 6%) and turnover (£2.0bn, 2%). Employment and turnover for UK and Overseas owned companies in each sector are shown in Figures 8 and 9.

**Figure 8: Distribution of sector employment between UK and Overseas life sciences businesses 2020**

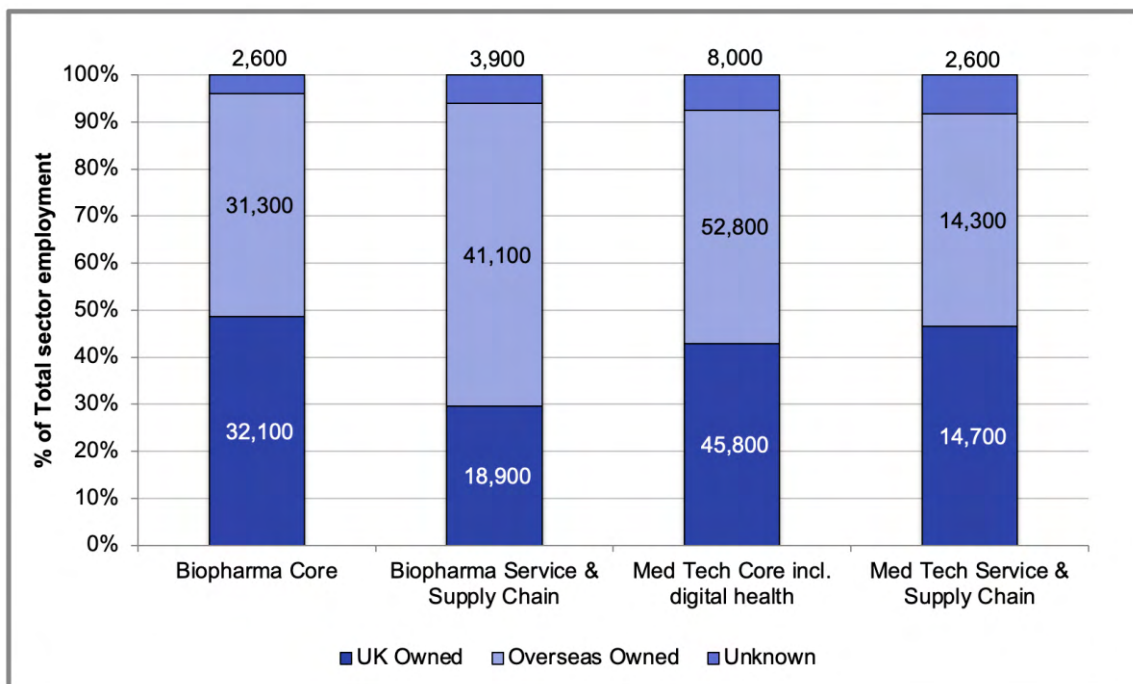
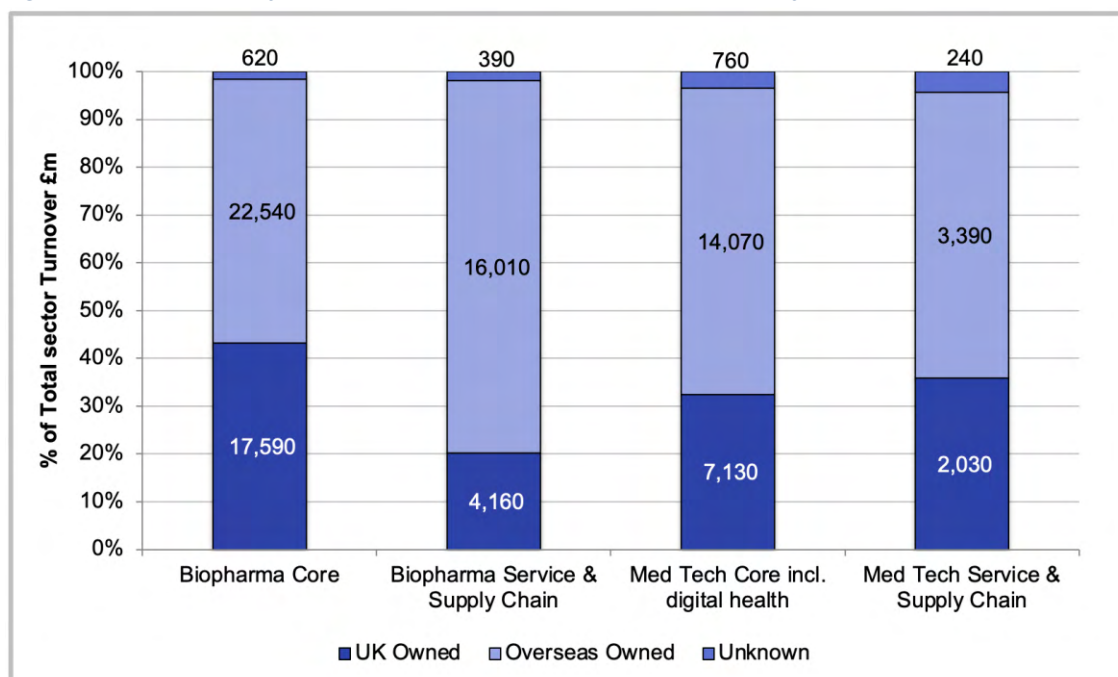


Figure 9: Distribution of sector turnover between UK and Overseas life sciences businesses 2020



## 7 Industry and sector trends 2011-2020

This section analyses the changes in employment and turnover between 2011 to 2020 using the methodology published in the user guide.

- Over the period 2011 to 2020, the life sciences industry increased employment by 31,500 an increase of 13%, at a compound annual growth rate (CAGR) of 1.4%.
- Total industry turnover increased in real terms<sup>13</sup> by £1.1bn between 2011 and 2020. This movement was driven by an increase in both Service & Supply Chain sectors and Core Med Tech (£9.2bn), which offset the decrease in the Core Biopharma sector (-£8.1bn).
- Over the period, Core Med Tech and the two Service & Supply Chain sectors showed overall increases in employment totalling 34,900, while the Core Biopharma sector reduced employment by 3,500.
- This decrease in the Core Biopharma sector was concentrated in the small molecule sector and over the period 2011 - 2013, during which time a number of the Top 25 pharmaceutical companies underwent re-structuring.
- The Core Med Tech employment grew by 13,100 between 2011 to 2020, an 14% increase.

<sup>13</sup> Deflated turnover calculated using Office for National Statistics deflators to bring turnover values to 2020 equivalent values. [GDP Deflators Spring Statement 2020 update issued 11<sup>th</sup> March 2020](#).

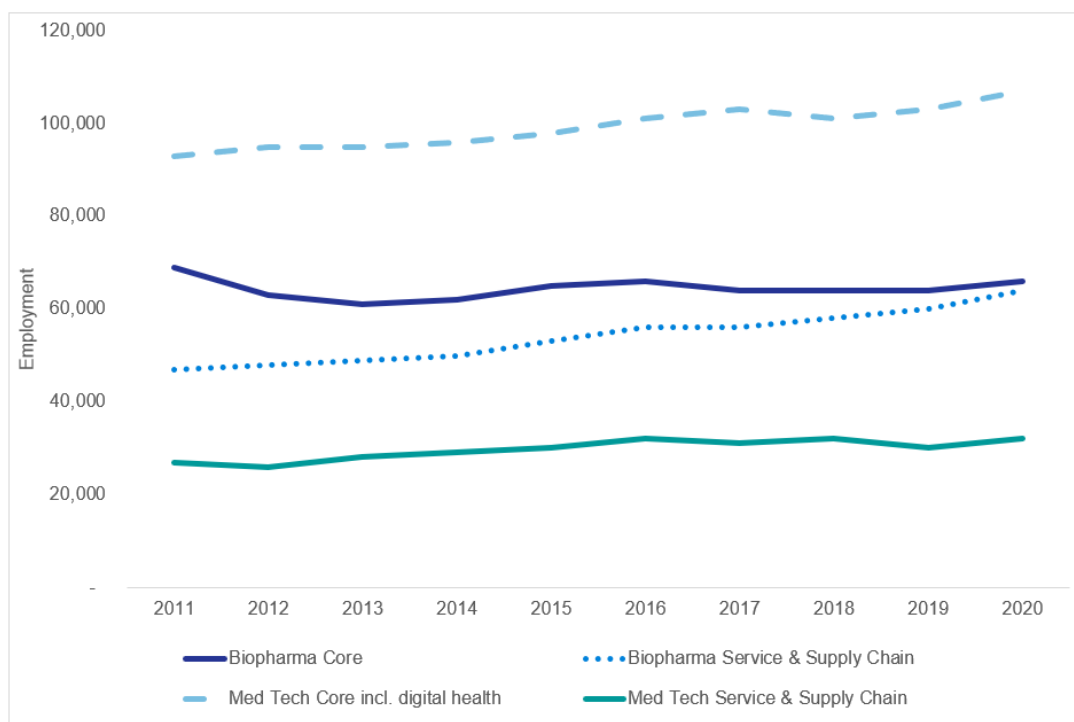


- Together, employment in the Service & Supply Chain sectors grew from 2011 to 2020 by 21,800 (30%), with the largest increase in employment in the Biopharma Service & Supply Chain sector (16,800).
- Over the 10 year period, the majority of regions in the United Kingdom have seen a net increase in employment in the life sciences industry. The West Midlands was the exception to this, seeing a decrease in employment.

## 7.1 Life sciences industry trends

Over the period 2011 to 2020, the life sciences industry increased employment by 31,500, an increase of 13% compared to 2011, at a compound annual growth rate (CAGR)<sup>14</sup> of 1.4%. This is compared to employment growth in all industries<sup>15</sup> of 12% since 2010 at a CAGR of 1.3%. Over the period, Core Med Tech and the two Service & Supply Chain sectors showed overall increases in employment totalling 34,900 while the Core Biopharma sector reduced in employment by 3,500. Several of the Top 25 companies, who are the majority employers in the industry, completed site closures and reorganisations during this period. All four sectors have seen growth in employment between 2019 and 2020, with Biopharma Service & Supply Chain increasing by 3,400 and Core Med Tech increasing by 3,100. More modest growth was seen in the Core Biopharma and Med Tech Service & Supply Chain sectors (increasing by 2,000 and 1,200 respectively).

**Figure 10: Employment by life sciences industry 2011 to 2020**



<sup>15</sup> UK employment (all industries) taken from Office for National Statistics HI00 Regional labour market: [Headline Labour Force Survey indicators for all regions 16<sup>th</sup> November 2021 release.](#)

Total industry turnover increased in real terms<sup>16</sup> by £1.1bn between 2011 and 2020, which was the result of the increase in both Service & Supply Chain sectors and Core Med Tech (£9.2bn), which offset the decrease in the Core Biopharma sector (-£8.1bn). From 2011 to 2013, total industry turnover declined after which growth resumed. This decrease was primarily driven by decreased revenue of £8.0bn in the Core Biopharma sector between 2011 and 2013, after which turnover remained broadly steady until a drop of £2.2bn in 2019. Core Biopharma grew turnover once more in 2020. These decreases were offset by a steady increase of £7.8bn from 2013 in the Biopharma Service & Supply Chain sector.

**Table 2: Employment, turnover, and number of sites for the life sciences industry 2011 to 2020**

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	236,500	231,600	234,300	237,900	247,200	254,800	254,300	255,600	258,400	268,000
Turnover £bn (2020 prices)	87.8	84.6	79.2	80.5	80.2	81.4	84.2	86.1	86.4	88.9
Sites	6,420	6,580	6,770	6,770	6,920	6,900	6,830	7,200	7,120	7,180

**Source:** Bioscience and Health Technology Sector Statistics – underlying tables spreadsheet

**Note:** Due to rounding, the values obtained when subtracting numbers in the tables may not be equal to the differences for values between years reported in the text.

## Top 5 Segments in the Core Sectors

Comparing the Top 5 segments of 2020 to those of 2011:

- The Top 2 segments by employment, Small Molecules and Digital Health, have remained the same but third and fourth have changed, with Single use technology rising to third largest employer and In vitro diagnostic technology dropping to fourth largest employer. Orthopaedic Devices has reduced in significance, falling out of the top five employers, whilst Assitive Technology remains the fifth largest employer.
- The Top 5 by turnover substantially changed rank. Small Molecules continue to be the largest in terms of turnover, whilst Vaccines are replaced by Single use technology as the second largest segment. Therapeutic Proteins move from fifth to third, and Digital Health replaces Orthopaedic Devices as fourth largest in the list. In vitro diagnostics is the fifth largest by turnover.

<sup>16</sup> Deflated turnover calculated using Office for National Statistics deflators to bring turnover values to 2020 equivalent values. [GDP Deflators Spring Statement 2020 update issued 11<sup>th</sup> March 2020.](#)

**Table 3: Top 5 segments in 2011 and 2020 in the Core sectors of Biopharma and Med Tech ranked by employment, turnover, and number of sites**

2011 Top 5 for core segments (excluding service & supply chain)				2020 Top 5 for core segments (excluding service & supply chain)			
	Employment	Turnover	Sites		Employment	Turnover	Sites
1st	Small Molecules 56,900	Small Molecules £43,730,000	Small Molecules 530	1st	Small Molecules 49,800	Small Molecules £34,936,000	Digital Health 690
2nd	Digital Health 9,900	Vaccines £2,538,000	Assistive Technology 380	2nd	Digital Health 14,400	Single use technology £2,007,000	Small Molecules 580
3rd	In vitro diagnostic technology 8,700	Single use technology £1,924,000	Digital Health 370	3rd	Single use technology 9,900	Therapeutic Proteins £1,960,000	Assistive Technology 340
4th	Orthopaedic Devices 8,400	Orthopaedic Devices £1,755,000	Re-usable diagnostic or analytic equipment 250	4th	In vitro diagnostic technology 9,900	Digital Health £1,950,000	In vitro diagnostic technology 260
5th	Assistive Technology 7,100	Therapeutic Proteins £1,745,000	In vitro diagnostic technology 250	5th	Assistive Technology 9,100	In vitro diagnostic technology £1,915,000	Single use technology 250

## Life science manufacturing activity

Between 2011 and 2020, turnover from UK companies involved in the manufacture of life science products decreased by £7.7bn in real terms. This decrease was driven by a fall in turnover in both the Core Biopharma sector (down £9.6bn) and Core Med Tech sector (down £2.3bn), which was partially offset by increases in Biopharma Service and Supply and Med Tech Service and Supply (up £3.9bn and £0.3bn respectively). The largest year-on-year decrease was seen between 2018 and 2019, when turnover from businesses involved in life science manufacturing turnover decreased by £3.7bn. This was followed by modest growth in 2020 (up £5.8m).

The general declining trend in turnover from businesses involved in manufacturing was not matched by a similar trend in employment between 2011 and 2020. Employment levels fluctuated in this time period, falling to 107,000 in 2014 before reaching a peak of 112,400 two years later in 2016, then falling again to 108,700 in 2019 before recovering to 111,200 in 2020. Overall, employment increased by 1,300 between 2011 and 2020.

Despite seeing decreases early on in the time series, the South West was the region which saw the largest growth in employment from companies involved in life science manufacturing between 2011 to 2020 (increasing by 1,600). Similar growth was also seen in Yorkshire and the Humber (up 1,500), North East (up 1,500) and North West (up 1,300). The largest decreases in turnover were seen in London (down £3.6bn), South East (down £2.6bn) and North West (down £2.3bn). Increases in turnover from businesses involved in life science manufacturing were seen in six UK regions between 2011 and 2020, most notably in East of England (up £0.9bn).

**Table 4: Employment, turnover and number of sites for UK life science manufacturing activity between 2011 and 2020**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	109,900	108,200	108,300	107,000	109,800	112,400	111,900	110,600	108,700	111,200
Turnover	39.3	38.4	35.7	37.0	34.7	34.9	35.3	35.4	31.7	31.7
Number of Sites	2210	2200	2210	2170	2160	2110	2060	2090	2030	2010

## 7.2 Core Biopharma and Med Tech sector trends

### Core Biopharma

The Core Biopharma sector employment fell by 3,500 (-5%) between 2011 and 2020, at a CAGR of -0.6%. Most of this decrease occurred between 2011 and 2012 when employment in the small molecules segment fell by 4,400. Overall sector employment has grown moderately in 2019 and 2020. The Advanced Therapy Medicinal Products (ATMP) segment showed an employment increase totalling 3,000 between 2011 and 2020.

Over the 10 years, this sector's turnover fell by £8.1bn. Turnover decreased between 2011 and 2013, after which turnover remained broadly steady until a drop of £2.2bn in 2019. Core Biopharma grew in turnover once more in 2020, by £1.8bn compared to 2019.

**Table 5: Employment, turnover, and number of sites for the Core Biopharma sector 2011 to 2020**

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	69,400	62,900	61,400	62,200	64,900	66,300	64,000	63,800	64,000	66,000
Turnover £bn (2020 prices)	48.8	45.8	40.8	41.8	40.3	40.4	40.3	41.1	39.0	40.7
Sites	780	800	820	820	850	870	880	920	910	930

**Source:** Bioscience and Health Technology Sector Statistics – underlying tables spreadsheet

**Note:** Due to rounding, the values obtained when subtracting numbers in the tables may not be equal to the differences for values between years reported in the text.

### Core Med Tech

The Core Med Tech sector employment grew by 13,100 over the period 2011 to 2020, an increase of 14% on 2011, and a CAGR of 1.5%. Twelve segments in Core Med Tech had an increase in employment, totalling 18,100; this was offset by decreases in the other eight segments of 4,900. Over the whole period, turnover grew in real terms by £0.7bn.

In the Digital Health segment, employment increased by 4,500 and turnover by £640m between 2011 and 2020. This represents 45% and 48% growth respectively. The number of sites has risen from 370 in 2011 to 690 in 2020. Of the businesses where the formation date is known, 60% (410) of Digital Health businesses were formed in 2011 or later.

**Table 6: Employment, turnover, and number of sites for the Core Med Tech sector 2011 to 2020**

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	93,400	94,500	95,000	96,500	98,400	100,700	102,600	101,400	103,400	106,500
Turnover £bn (2020 prices)	21.3	21.2	21.0	20.7	20.5	20.6	21.1	21.0	22.0	22.0
Sites	3,100	3,130	3,210	3,150	3,220	3,180	3,140	3,290	3,240	3,220

**Source:** Bioscience and Health Technology Sector Statistics – underlying tables spreadsheet

**Note:** Due to rounding, the values obtained when subtracting numbers in the tables may not be equal to the differences for values between years reported in the text.

### 7.3 Service & Supply Chain sector trends

Both Service & Supply Chain sectors increased employment and turnover between 2011 and 2020, by 21,800 and £8.5bn respectively, with the largest increase in employment in the Biopharma Service & Supply Chain sector (16,900). The segment which saw the largest increase in employment was the contract manufacturing and research segment (6,400) for Biopharma Service & Supply Chain, and reagent, equipment and consumable suppliers segment (1,300) for Med Tech Service & Supply Chain.

#### Biopharma Service & Supply Chain

Between 2011 and 2020, the Biopharma Service & Supply Chain sector employment and turnover increased by 36% (16,900) and by 54% (£7.2bn) respectively. The sector exhibited steady growth in employment in all years and the CAGR over the period was 3.5%.

**Table 7: Employment, turnover, and number of sites for the Biopharma Service & Supply Chain sector 2011 to 2021**

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	47,000	47,800	49,400	50,400	53,500	55,800	56,300	58,300	60,500	63,900
Turnover £bn (2020 prices)	13.3	13.0	12.8	13.0	14.1	14.8	17.1	18.1	19.7	20.6
Sites	1,400	1,460	1,520	1,550	1,590	1,600	1,590	1,670	1,670	1,690

**Source:** Bioscience and Health Technology Sector Statistics – underlying tables spreadsheet

**Note:** Due to rounding, the values obtained when subtracting numbers in the tables may not be equal to the differences for values between years reported in the text.

#### Med Tech Service & Supply Chain

Between 2011 and 2020, the Med Tech Service & Supply Chain sector employment increased by 5,000 and turnover by £1.2bn over the period. The sector experienced a downturn between 2018 and 2019 of 1,600 employees and £0.3bn. Turnover decreased modestly between 2019 and 2020, but the sector's employment returned to growth that period. The sector employment had a CAGR of 1.9% between 2011 and 2020.

**Table 8: Employment, turnover, and number of sites for the Med Tech Service & Supply Chain sector 2011 to 2021**

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Employment	26,700	26,400	28,500	28,900	30,400	32,000	31,400	32,100	30,500	31,600
Turnover £bn (2020 prices)	4.4	4.5	4.7	5.0	5.3	5.6	5.8	6.0	5.7	5.6
Sites	1,150	1,180	1,210	1,240	1,260	1,250	1,220	1,330	1,310	1,340

**Source:** Bioscience and Health Technology Sector Statistics – underlying tables spreadsheet

**Note:** Due to rounding, the values obtained when subtracting numbers in the tables may not be equal to the differences for values between years reported in the text.

## 7.4 Geographical trends

When comparing geographical employment data over the 10 year period, the majority of regions in the UK have seen a net<sup>17</sup> increase in employment in the life sciences industry. One region in England, the West Midlands, saw employment fall by 800.

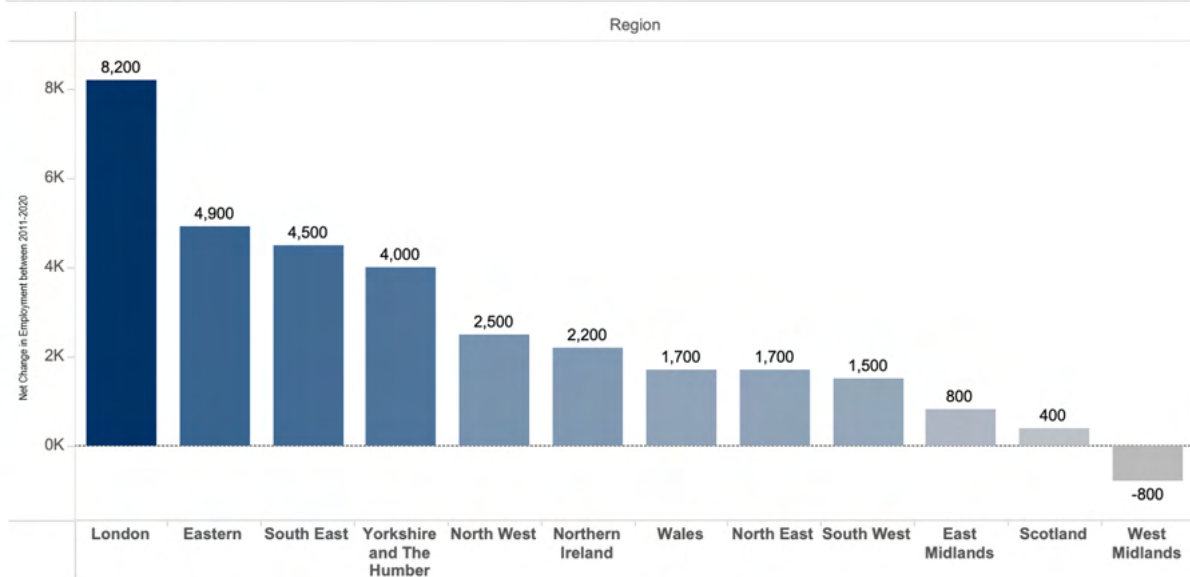
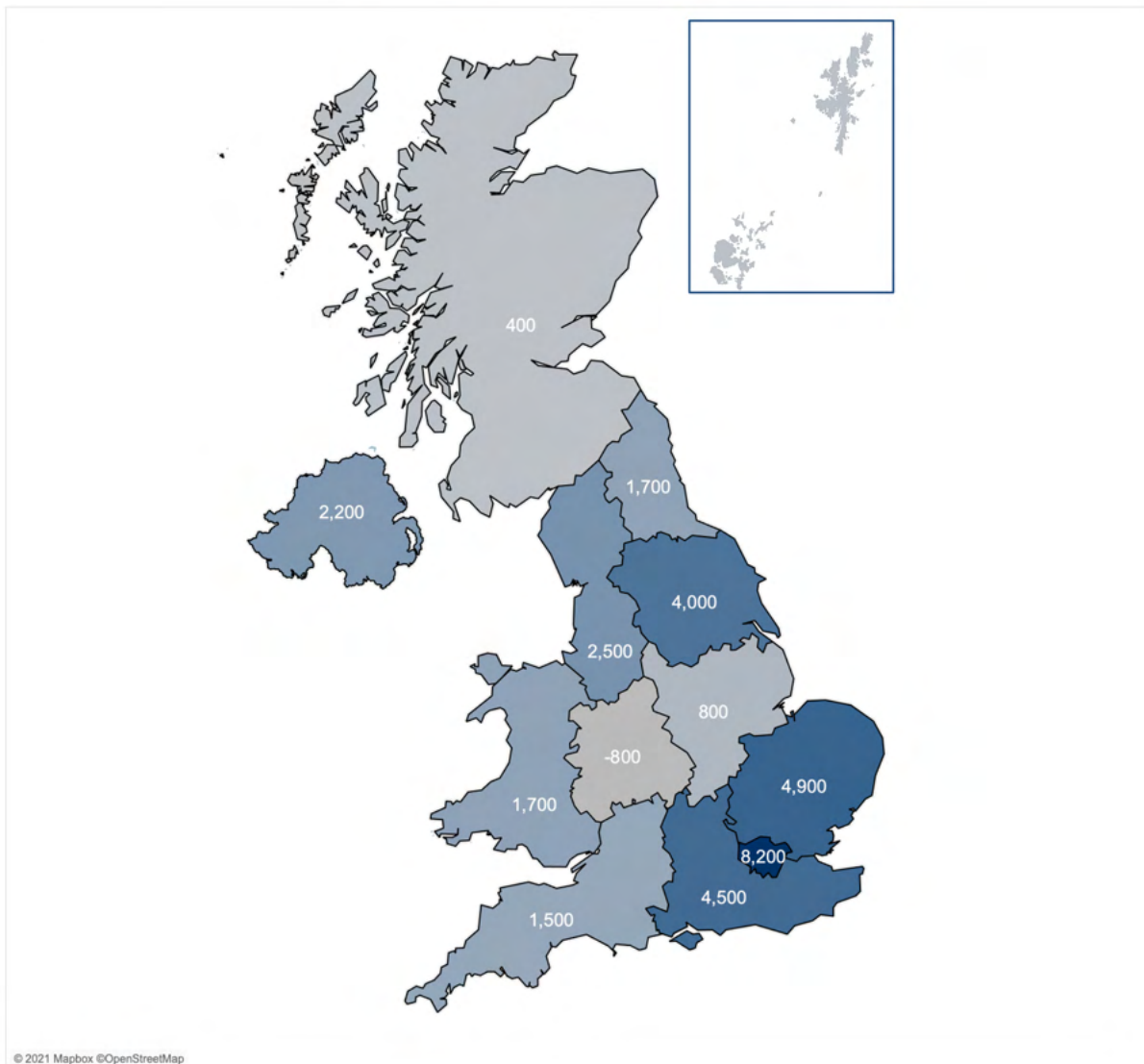
The geographical net changes in employment vary by life sciences sector. These major changes are:

1. Core Biopharma – This sector saw a large decrease in employment in the South East (7,100) and a large increase in the East of England (3,600). The main cause of the fall in employment in the South East was the restructuring of three Top 25 Pharma businesses that resulted in closures of a number of sites in the region.
2. Core Med Tech – This sector exhibited increases in all regions of England except for a decrease in the West Midlands (1,400). There were increases in Northern Ireland (600) and Wales (200) but a notable decrease in Scotland (600). The fall in employment in the West Midlands is due to a mixture of causes. These include movement of businesses to other UK regions and acquisition of businesses by overseas owners leading to restructuring. The main cause of the fall in Scotland was the closure of a manufacturing plant operated by one of the Top 30 Medical Device businesses.
3. Biopharma and Med Tech Service & Supply Chain – Combined employment in these sectors increased in all regions of England and in Northern Ireland, Scotland, and Wales. There was a large increase in the South East in the Biopharma and Med Tech Service & Supply Chain sectors (8,200). Biopharma Service & Supply Chain sector increases were also notable in the East of England (2,400), North West (2,000), London (1,800) and Yorkshire and The Humber (1,700).

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<sup>17</sup> The net changes in employment in a region will be the result of a combination of new company formation, growth at existing companies, movement between regions, inward investment into the UK and companies reducing employment or trading.

**Figure 11: Net changes in employment between 2011 and 2020 for the life sciences industry in regions of England, Northern Ireland, Scotland, and Wales**





## Annex 1– Data partners acknowledgement statement

The Office for Life Sciences gratefully acknowledge the contribution of the following regional and national organisations in the compilation of the Bioscience and Health Technology Sector Statistics database over the past eleven years.

The content of the database has been derived from a variety of proprietary data sources which have been provided under licence. The Office for Life Sciences would like to acknowledge the assistance given by the owners of these data sources.

Business Information was accessed under licence by Dun & Bradstreet (D&B) Limited and the FAME database from Bureau van Dijk Electronic Publishing. More details on how this data is used can be found in User Guide.

The database construction, data integration, data analysis and commentary preparation were completed by a consortium led by Kepier & Company Ltd. The consortium included Cels Business Services (CBSL) Ltd. and Lindum Research.

### Data partners

- Association of British Healthcare Industries (ABHI)
- Association of the British Pharmaceutical Industry (ABPI)
- AXREM
- BioIndustry Association (BIA)
- BioNow
- Bioindustry
- Biopartner
- Biosciences Knowledge Transfer Network (KTN)
- British Healthcare Trade Association (BHTA)
- British In Vitro Diagnostics Association (BIVDA)
- HealthTech and Medicines Knowledge Transfer Network (KTN)
- Innovate UK
- Invest Northern Ireland
- MedCity
- Medicines Discovery Catapult
- Medilink East Midlands
- Medilink North of England
- Medilink South West
- Medilink West Midlands
- MediWales
- MHRA
- OBN
- One Nucleus
- Scottish Enterprise
- South East Health Technologies Alliance (SEHTA)
- TechUK
- Welsh Government
- West of England LEP