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# UK Health Research Analysis 2022

UK Clinical Research Collaboration 2023



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Published by the Medical Research Council, part of UK Research and Innovation

This report was released in early access from December 2023, and formally published on 1st of February 2024.

*Note: this is v1.2, released in September 2024. It contains minor corrections to values on p18 (total column) and p128 (indirect investment).*

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This paper contains analysis based on data obtained on 30 June 2023, from Digital Science's *Dimensions* platform, available at <https://app.dimensions.ai>. Access was granted to subscription-only data sources under licence agreement.

Acknowledgment should include "UK Health Research Analysis 2022 (UK Clinical Research Collaboration, 2023) <https://hrcsonline.net/reports/analysis-reports/uk-health-research-analysis-2022/>".

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This publication is available at:  
<https://hrcsonline.net/reports/analysis-reports/uk-health-research-analysis-2022/>

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# Acknowledgements

The authors would like to thank all organisations which participated in this analysis, particularly those new to the process. Coordinating so many organisations and curation of data has been a significant challenge which would have been considerably harder to manage were it not for the help of the staff at each organisation in contact with us.

Particular thanks go to the Association of Medical Research Charities (AMRC) for their help in compiling and submitting data on behalf of their membership.

Finally, a huge thank you to the Health Research Analysis Forum (HRAF) for their support and contributions to the project, report and the HRCS as a whole.

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### **With grateful support from**

Eve Forrest & Ann Jeffcott	Economic and Social Research Council, UKRI
Michael Cunningham	Health and Social Care R&D Division, Public Health Agency, Northern Ireland
Dan Worth & Juan Acevedo	Association of Medical Research Charities
Annie Sanderson	Wellcome Trust
Margarida Resende	National Institute for Health and Care Research
Annika Brogaard Maczka & Rosina Bevan	Versus Arthritis

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# Executive Summary



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# Executive Summary

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The [UK Clinical Research Collaboration](#) (UKCRC) is a partnership of the main stakeholders that influence clinical research across the business, public and charitable sectors in the UK. The aim of the UKCRC is to keep the UK a world leader in clinical research. For partner organisations to be able to effectively co-ordinate activities, accurate and timely evidence is needed about health research supported across the UK. The UKCRC Health Research Analysis Forum (HRAF) is a subgroup of twelve large public and charity funders of health research, plus the Association of Medical Research Charities (AMRC), who collectively are responsible for periodically analysing the UK health research landscape.

This report is the fifth in the *UK Health Research Analysis* reporting series; a UK-wide analysis of public and charity funded health relevant research, produced by the HRAF since 2004, which provides the most detailed view so far of UK research in this area. The [Health Research Classification System](#) (HRCS) was used to categorise over 23,500 projects supported by 173 funding organisations, corresponding to over £4bn of spend within the UK in 2022 (£2.8bn spent directly on research projects and £1.4bn on infrastructure). We also estimate a further £865m of health-relevant funding from other sources not directly captured in the analysis, giving a total public/charitable expenditure in 2022 of £5.03bn. This is close to a separate, top-down estimate of the health-relevant proportion of total R&D spend using data from the Office for National Statistics, totalling £10.13bn in 2022 (of which £5.01bn is from the pharmaceutical private sector and £5.12bn from public/charitable sectors).

Analysis of this dataset shows that public funding for health relevant research in the UK, whether by taxation via the Government, memberships of societies/professional bodies or by donation via medical research charities, has increased over the 18-year period. However, much of this growth in this funding has occurred in the first five years of reporting (2004-2009) with analysis of compound annual growth rate (CAGR) of 8.5%. Since that point, we evidence 14 years of near flat funding from 2009/10 to 2022 and, for the first time since the inception of this analysis series, a small but worrying real-terms decrease in health research funding between 2018 and 2022.

Examining the breadth of research activities undertaken by projects, comparing 2004 and 2022 data, we observe a decrease in the proportion of total funding for underpinning (-17.3%) and aetiological (-6.5%) research. While the proportion is decreasing these fundamental discovery activities, predominantly funded through UK Research and Innovation (UKRI) and medical research charities, still account for almost half of publicly supported health research and have received a real term increase in funding of £304m since 2004.

Continuing a trend first noted in our 2014 report, there has been additional investment in research activities important for translation, i.e. research that aids translating scientific discoveries into new treatments and healthcare benefits. Research on detection and diagnosis, treatment development and treatment evaluation have received an increasing proportion of total health research spend (+13.0%) between 2004 and 2022 resulting in a real term increase of £676m over 18 years. Similarly, and in part due to the evidence provided by previous reports in this series, prevention research has also received an increased proportion of total health research expenditure (+4.7%, real term increase of £165m since 2004). The funding for the earlier stages of translational activity is shared across funders, however the majority of clinically relevant research topics (e.g. disease management and health services) are supported by Government departments and clinical professional bodies, predominantly the Department of Health and Social Care. This area has also seen increases in real terms spending (+6.2%, £273m) but has also seen proportionally more spend since 2014, with a significant increase between 2018 to 2022.

Assessment of the proportion of overall spend by health category shows relatively stable funding for many diseases or conditions, with a quarter of expenditure on research of a generic health relevance (i.e. applicable to all conditions or without a specific disease focus). While almost a fifth of health funding is on cancer research, our analysis has shown a decrease in proportion of funding; down by 2.1% since 2018. The largest growth has been in infections research (+6.4% since 2004), a steady upward trend across the 18-year reporting period as funders begin to address the challenges of antimicrobial resistance and, more recently, channelled significant spending into COVID-19 research and post-pandemic recovery.



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The geographical distribution of health relevant research funding by region remains stable between 2004 and 2022, with some volatility in the most recent 2018-2022 period. The largest proportion, just under one third of funding, is allocated to London with other research-intensive areas (Oxford and the South East, Cambridge and the East of England) at 16% and 13% respectively.

The increase in number of participating organisations beyond the original HRAF contributors has provided a considerably more complex dataset for analysis. With 173 organisations, more than double since the 2014 analysis, the contribution from these additional organisations now totals 30% of awards submitted and 15% of the overall expenditure.

The *UK Health Research Analysis* series provide a comprehensive update to information about UK health research. Health and biomedical research are a vital component of the UK science base, with a strong positive rate of return to the UK economy<sup>1</sup>, and so these regular analyses provide helpful evidence to support monitoring and strategic coordination. The publication of an openly accessible dataset of UK public and charity funded health research - available via the HRCS website ([www.hrcsonline.net](http://www.hrcsonline.net)) – also allows for the data to be re-used for further analysis.

The HRAF will continue to promote the wider use of the HRCS for analysing health research funding, continue to improve the methods used to code awards, disseminate the *UK Health Research Analysis* reports and provide access to the public datasets to support strategic discussions and collaborations.



**Dr James Carter,**  
Chair, UKCRC Health Research Analysis Forum  
Medical Research Council, UK Research and Innovation

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<sup>1</sup> For examples, see the “Medical Research: What’s it worth?” section of the MRC performance, monitoring and evaluation webpage: <https://www.ukri.org/who-we-are/mrc/performance-monitoring-and-evaluation/>

# Introduction and Purpose of the Analysis

The logo for the UK Clinical Research Collaboration is a yellow triangle pointing downwards, with a decorative, spiky border. The text "UK CLINICAL RESEARCH COLLABORATION" is written inside the triangle in white, stacked vertically.

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# Introduction and Purpose of the Analysis

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The UK Clinical Research Collaboration (UKCRC) was set up in 2004 with the aim of establishing the UK as a world leader in clinical research<sup>2</sup>. The collaboration is a partnership of the main stakeholders that influence clinical research across the business, public and charitable sectors. Part of the remit for the collaboration was to compile new high-quality information on the UK health research funding landscape. The aim was to support partner organisations in developing a coherent, unified approach to funding clinical research in the UK.

To compile funding information in a consistent format across different health funders required a new classification system. Established in 2004, the Health Research Classification System (HRCS) was developed by the UKCRC's secretariat using a dual code system covering both areas of health and disease (termed 'Health Categories', (HC)) and type of research (termed 'Research Activity', (RA)) to answer strategic questions about health research investment.

Using the HRCS, the *UK Health Research Analysis report*<sup>3</sup> was the first ever UK wide assessment of public and charity funded health research. Published by the UKCRC in 2006, this report captured data from the 11 largest public and charitable health funders for the 2004/05 financial year. The analysis provided a geographical overview of spending across all areas of health research and a detailed assessment of individual areas of health and disease and comparisons to World Health Organisation (WHO) burden of disease across the UK.

This first *UK Health Research Analysis* has been widely cited, providing the basis for high level strategy discussions<sup>4</sup> and several joint funding initiatives<sup>5</sup>. Its success prompted a series of subsequent reports; first an assessment of other medical charities commissioned by the Association of Medical Research Charities (AMRC)<sup>6</sup> in 2007, a follow-up nationwide *UK Health Research Analyses* in 2009/10<sup>7</sup> and a third nationwide analysis in 2014<sup>8</sup> and a fourth analysis in 2018<sup>9</sup>. Each iteration increased the scope and scale of the assessment, introducing new analyses (e.g. total UK health R&D expenditure, quantifying sources of indirect support for health research) and increasing the number of participating organisations (up to 64 funders in 2014 and 146 funders in 2018).

This analysis is the fifth in the *UK Health Research Analysis* series and its primary aim continues to be to provide detailed information about public and charity funded UK health research projects. The 2022 analysis has gained the widest participation in the exercise to date, with submissions from 173 organisations<sup>10</sup> connected to health and biomedicine.

This report and analysis were compiled by the Medical Research Council (MRC), overseen and approved by the Health Research Analysis Forum (HRAF)<sup>11</sup> on behalf of the UKCRC.

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2 UK Clinical Research Collaboration (UKCRC) <http://www.ukcrc.org/>

3 *UK Health Analysis* (data from 2004/05), published 2006 by UKCRC [http://hrcsonline.net/uk\\_health\\_research\\_analysis\\_report\\_2004\\_05/](http://hrcsonline.net/uk_health_research_analysis_report_2004_05/)

4 The HRCS was used to highlight the characteristics of UK health research in the UK Government's review of publicly funded healthcare research chaired by Sir David Cooksey and published in 2006; DOI [10.1136/bmj.39059.444120.80](https://doi.org/10.1136/bmj.39059.444120.80)

5 For example, the UKCRC's own public health research group, and evidenced in the first nationwide prevention research collaboration, the National Prevention Research Initiative (NPRI).

6 *From Donation to Innovation* (data from 2004/05), published 2007 by UKCRC [http://hrcsonline.net/uk\\_health\\_research\\_analysis\\_from\\_donation\\_to\\_innovation\\_report\\_2004\\_05/](http://hrcsonline.net/uk_health_research_analysis_from_donation_to_innovation_report_2004_05/)

7 *UK Health Research Analysis 2009/10*, published 2012 by UKCRC [http://hrcsonline.net/uk\\_health\\_research\\_analysis\\_report\\_2009\\_10/](http://hrcsonline.net/uk_health_research_analysis_report_2009_10/)

8 *UK Health Research Analysis 2014*, published 2015 by UKCRC [http://hrcsonline.net/uk\\_health\\_research\\_analysis\\_report\\_2014\\_web/](http://hrcsonline.net/uk_health_research_analysis_report_2014_web/)

9 *UK Health Research Analysis 2018*, published 2020 by UKCRC <https://hrcsonline.net/uk-health-research-analysis-2018-for-web-v1-28jan2020/>

10 13 HRAF members, plus 120 AMRC members (excluding HRAF) and 40 other organisations.

11 UKCRC delegated responsibility for the continued governance of the HRCS and production of subsequent analysis to the HRAF, following disbanding of the UKCRC secretariat in 2007/08. The HRAF consists of representatives from the twelve original funders participating in the 2004/05 analyses plus the AMRC, which represents its entire membership.

# Scope of the Analysis

The logo for the UK Clinical Research Collaboration is a stylized, multi-pointed starburst or sunburst shape. It is composed of numerous thin, radiating lines that form a triangular shape pointing towards the bottom right. The lines are colored in a gradient from light yellow to a darker, more vibrant yellow.

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# Scope of the Analysis

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## Participating organisations

Health relevant research and development activity in the UK benefits from funding provided by the public<sup>12</sup>, charity<sup>13</sup> and private sectors. This report focusses on the details of public and charity funded UK health research and sets this in the context of an estimate of the total funding available for health research in the UK.

One of the objectives of the Health Research Analysis Forum (HRAF) was to widen participation in the analysis to deliver greater representation of funding across disease areas, research activities, and geography. Although previous analyses have estimated that 90-95% of UK health relevant expenditure had been captured, the inclusion of even more UK funders adds reassurance that the analysis is as robust as possible and provides a dataset that can be explored in more detail by others asking specific questions about particular disease areas.

Overall, we approached 313 organisations all of whom were connected to health, healthcare or biomedical research:

- 13 HRAF member organisations
- 150 full members of the Association of Medical Research Charities (AMRC) - itself a HRAF member – were approached by AMRC, 124 of whom agreed to join the analysis
  - this represents 83% of full AMRC membership but ~99% of total UK medical charity expenditure

- 76 non-AMRC charities were approached independently by the project management team, of which 6 joined the analysis (8%)
- 39 UK Government and other publicly funded organisations (including the non-HRAF members from UKRI) were also approached independently, 17 joined the analysis (43%)
- 38 professional organisations, primarily Medical Royal Colleges, and learned societies (e.g. Academy of Medical Sciences, British Academy) were also approached independently, of which 10 joined the analysis (26%)

In total, 173 organisations – 55% of the organisations approached - agreed to participate in the analysis. Of these, 21 provided qualitative-based submissions and 152 provided both a narrative text and data for the analysis.

A full list of participating organisations with a narrative explanation of their role and involvement in health research can be found in **Appendix 1**, with details of funding submitted to the analysis in **Appendix 2**.

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12 In this report “Public” refers to mainly UK Government funding provided via UK Government departments (e.g. Department of Health and Social Care), non-departmental public bodies (such as UK Research and Innovation) and from the devolved Governments of the UK.

13 In this report “Charity” refers mainly to funding provided by officially registered UK charities, the majority of which are members of the Association of Medical Research Charities. There are also some UK not-for-profit private organisations supporting health relevant research.

## Data Criteria

### Data included in the main analysis

The criteria for expenditure data to be included in the main analysis broadly match those of previous reports:

- research is funded by a participating organisation
- research is of health or biomedical relevance
- the award must be active in the calendar year 2022<sup>14</sup>

We have made a distinction between grants focussed on **directly** supporting specific research programmes and projects<sup>15</sup> and funding that support more **indirect** aspects such as infrastructure (which may include administration, building maintenance or support for national facilities).

While both types of support are essential for health research our main analysis focuses on the **directly** funded, usually peer reviewed, research where funding can be directly attributed to a set of clearly defined research objectives. Such awards can be classified using HRCS by type of research activity and area of health or disease i.e. directly funded research, training awards and projects, plus clearly defined programme and unit awards (direct awards only).

Our assessment of overall UK investment in health-relevant research includes the data gathered on indirect funding – infrastructure, training, equipment - which cannot be easily coded using the HRCS.

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14 The analysis is designed to provide a snapshot of research that was 'live' (i.e. funded research was taking place) at any point on or between the 1st of January and 31st of December 2022. Note that the earliest analyses (2004/05 and 2009/10) used expenditure information for financial years, but since the 2014 analysis it was agreed to standardise on a calendar year so that all awards were active in exactly the same time period.

15 While it is recognised that what we refer to in the *UK Health Research Analyses* as direct awards also include elements of indirect costs (e.g. salaries, full economic costing contributions), this is generally not easily separated from the overall award value.

### Data included in the assessment of indirect funding and total health R&D estimation:

By definition it is not possible to attribute **indirect** funding to particular health areas in a meaningful way. This is usually due to the nature of the funding itself or the detail on an award level being too far removed from the details of the research being supported to be easily coded using the HRCS or indeed most other classification systems. To inform discussion of this type of funding, individual Indirect awards are sub-classified using broadly defined criteria:

- **infrastructure funding**

- capital infrastructure – building construction, maintenance and core costs
- R&D Support for NHS Providers – principally Clinical Research Networks<sup>16</sup>
- administrative support – including library funding and publication costs
- R&D resources – this includes supportive funding for cohorts, data repositories to ensure the resource is managed and available for use in research

- **personal funding – supporting individual researchers**

- individual salary support (separate to project costs)
- costs relating to attending meetings
- membership of professional bodies

- **training and studentship funding**

- studentships, fellowships, scholarships and other training where no research objectives are available and therefore are not eligible for core HRCS analysis
- this includes aggregated awards for multiple studentships, where details of the individual student projects being funded are unavailable

- **unclassified / other award funding**

- any other funding submitted for the analysis which cannot be quantified under the Health Research Classification System or otherwise categorised as above

Details of the indirect expenditure captured by this analysis can be found in **Appendix 2** on **page 121**.

In addition to this indirect support via the participating organisations, we have also collated data on other health-relevant spending to produce an estimated value for total public/charitable health R&D expenditure for 2022. This estimation come from a variety of sources, but includes:

Higher education funding councils quality-related (QR) funding to universities:

- other sources of NHS funding for research
- support for full economic costing

Full details of this assessment can be found in **Appendix 4**.

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<sup>16</sup> Note that support for the NIHR Clinical Research Network (CRN) was not consistently classified as infrastructure in the 09/10 analysis but has been exclusively assigned to the indirect assessment in this report series since 2014.

### Data excluded from the analysis

The primary exclusion criteria for this report remains research **which is not considered health research relevant**. In expanding the organisations involved in this analysis, we re-visited the definition of 'health relevancy'.

For this analysis we have included any type of funding for research where health is a consideration, either as an indicator or direct outcome of the project (e.g. impact of pollutants on disease). We would generally exclude funding for topics where the health component is only implied or a long-term consideration. For example, climate change will have eventual health impacts but not all climate change research would be considered health relevant.

Similarly, what is considered research has also required some clarification. This analysis used any funding that asks a question or poses a theory and seeks to answer it. Therefore, any evaluation, comparison, trial or assessment of services, interventions or methodologies would all be considered research here, even if conducted outside the usual academic setting. This means funding for healthcare services or support groups would not be considered research unless they also seek to advance knowledge of the disease or service provided (else this analysis would include the entire NHS budget).

Given these two definitions, there are still areas of UK health research not covered by this analysis:

- **industry funded research**

- the private sector remains the largest source of undefined health research funding not captured by this analysis, due to the lack of publicly available data
- we can therefore only make estimates based on other sources (e.g. ONS)

- **research funded by other organisations not included in the analysis, including:**

- the remaining medical research charities that are full members of AMRC (n= 27)
- research funded by other not-for-profit organisations
- research funded by other aspects of UK Government, including local authorities
- research funded within devolved NHS Trust budgets not administered through DHSC

- **research taking place in the UK funded by non-UK organisations**

- international funding into the UK is excluded from the main analysis in this report
- note - awards submitted to this analysis but funded outside the UK are summarised in **Appendix 8**



# Combined Spend Analysis

The combined database from all participating organisations (152/173 funders) contains 22,728 awards with a combined spend within the UK of £4.17bn in 2022. Much of this spending (a total of £2.79bn) is from the 18,023 awards that directly fund research. The total for spend across indirect awards (4,705 awards) is £1.38bn.

Overall the value of direct research funding submitted for the analysis in 2022 has doubled since 2004 but, when accounting for indirect supportive funding, we observe a decrease in real terms spending since the previous analysis in 2018 for the first time in this analysis series.

Four years ago, direct funding for health research was £2.56bn, now £2.77bn accounting for inflation. The total for direct funding for health research in 2022 is £2.79bn, an increase of just £22.5m, or 0.8% of total, in real terms (see **Figure 1** and **Table 1** for details).

However, while direct research funding has increased slightly, the amount of 'indirect' funding that supports research (infrastructure, training, etc.) has fallen by £133m in real terms since 2018. This means the overall total for this analysis, £4.17bn, is £110m lower in real terms than the £4.28bn in our analysis in 2018 (see the **Indirect Funding Assessment** for further details).

To remove changes introduced by adding new participating organisations over time, we have also assessed the contributions from the original 12 HRAF organisations separately. Having done this, we still observe a small

increase (£32m, 1.4%) in the total value of direct research funding from HRAF organisations between 2018 and 2022. However, within the original 12 funders, the value of indirect support funding has also fallen in real terms; from £1.26bn in 2018 to £1.08bn in 2022; a decrease of £177m in real terms, or -14.8%.

As an alternative measure, we also calculated the Compound Annual Growth Rate (CAGR)<sup>17</sup> of HRAF funder expenditure. Across the full lifespan of our analyses, the CAGR was 3.1% between 2004 and 2022. However, the intervening CAGR between reports is more variable, with a sharp increase between 2004 and 2009 (8.3%) followed by a modest rate of 1.5% from 2009 to 2018; effectively a levelling of health research funding for ten years. Between 2018 and 2022, CAGR was -3.8%; an early indicator of a downturn in funding.

These indications of a decrease in research funding are a concern for all stakeholders. Given our methodology relies on inflation-indexed comparisons, the current high inflation rates will be a contributory factor and subsequent analyses may show this trend to be temporary. Nevertheless, the financial pressures and reduction in purchasing power for awards made and still active in the current financial climate is a known issue. Similarly, the disruptions of the pandemic, in particular to medical research charities due to their reliance on donations, has also had an impact on the ability of funders to support health research.

<sup>17</sup> CAGR is the rate of return required for an investment to grow from its beginning balance to its ending balance, assuming that the profits from each year are re-invested each year (compounded). This is used to give an average annual growth rate for a defined period.

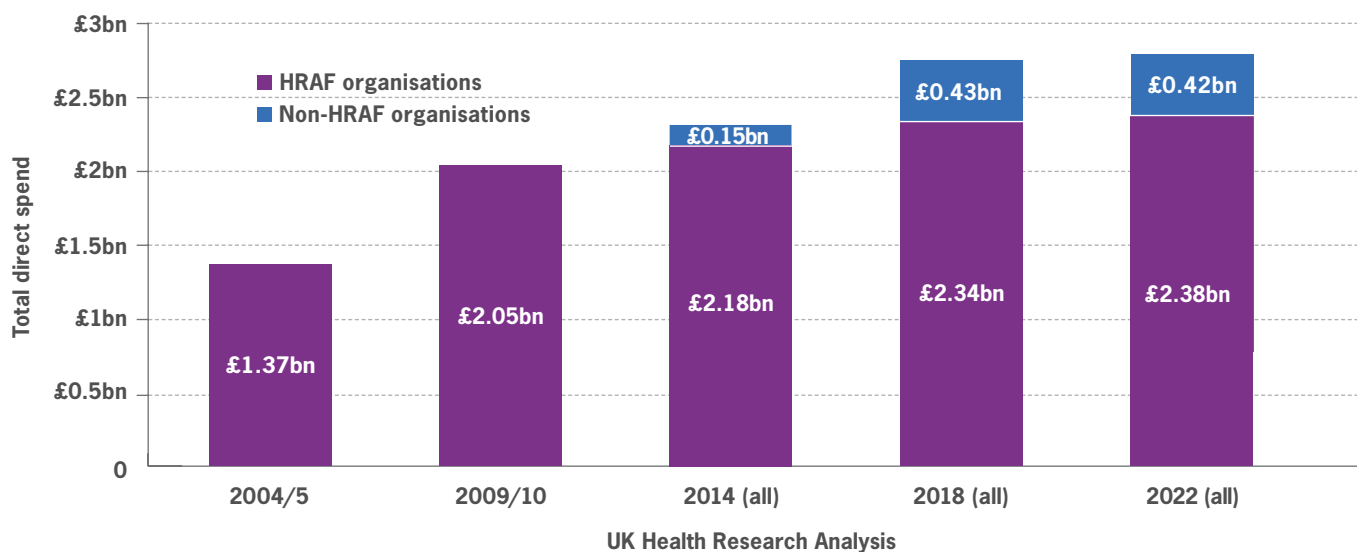


Figure 1 – Combined direct spend totals for UK Health Research Analysis series (2004/05 to 2022). Data from the original HRAF (12 funders) and total participating organisations are shown separately to allow comparison across time

Report	# of Funders	# Direct Awards	% growth vs. previous report	Direct (real terms) <sup>18</sup>	% growth vs. previous report	Indirect (real terms)	Total (real terms)
2004/05	(12) <sup>19</sup>	9901	0.00%	£1.37bn	n/a	n/a	£1.37bn
2009/10	12	11482	16.00%	£2.05bn	49.10%	£1.04bn	£3.08bn
2014 (All)	64	14934	30.10%	£2.33bn	13.70%	£1.13bn	£3.45bn
2018 (All)	123	18308	22.60%	£2.77bn	19.00%	£1.51bn	£4.28bn
2022 (HRAF)	12	12675	-9.88%	£2.38bn	1.37%	£1.08bn	£3.46bn
2022 (All)	152	18023	-1.55%	£2.79bn	0.81%	£1.38bn	£4.17bn

Table 1 – Number and value of direct research awards and supportive indirect funding across the UK Health Research Analysis series (2004-2022)

18 In this report previous analysis figures are expressed in real terms (i.e. 2022 prices) using the UK GDP deflator data as at December 2022. Full details of the calculations can be found in the **Methods** chapter.

19 Only 11 funders feature in the original 2004/05 report. Arthritis Research UK (now Versus Arthritis) joined the HRAF group for the 2009/10 report and provided retrospective data for the 2004/05 reporting period.

### New Funders to the UK Health Research Analysis series

Since 2014 our analyses have included data from organisations beyond the original 12 HRAF funders<sup>20</sup>. Our latest report includes 161 additional organisations, outside of the HRAF adding 5,348 awards and £416m in research spend and a further £292m on indirect funding active in 2022.

A full breakdown of all funding organisations by award numbers and award value can be found in **Appendix 2**.

However, throughout this report we make comparisons with previous reports in the series, which given the variation in participating organisation could lead to conclusions drawn from variances in funders, not funding. We therefore validated this approach by assessing how the contributions from new participating organisations influenced the HRAF vs all organisation comparisons. A more detailed explanation of this process can be found in **Appendix 3**.

### Indirect Funding Assessment

In total £1.38bn of health relevant funding was reported as indirect funding. The majority of this funding is classified as Infrastructure (£1.17bn, 85% of indirect total), which includes large capital support funds such as:

- Medical Research Council (MRC)'s core support for the Francis Crick Institute
- Cancer Research UK (CRUK)'s non-programme/ infrastructure support at their cancer research institutes
- Wellcome's support for the Sanger Institute
- Department of Health and Social Care (DHSC)-funded National Institute for Health and Care Research (NIHR) [Clinical Research Network](#)

A small proportion of this funding (6%, £82m) was for unclassified awards; records confirmed as health relevant but with insufficient detail to classify using the HRCS. The majority of this comes from organisations that use automated coding methods. Training and studentships (£104m) and personal awards supporting individual researchers (£17m) completes this assessment.

The 2009/10 Health Research Analysis was the first to introduce an assessment of indirect funding, with a total of £827m (now £1.04bn in real terms). Both 2014 and 2018 reports showed increased funding to the indirect mechanisms of support. As highlighted, while this 2022 analysis shows an increase of £341m (33%) in real terms since 2009/10, indirect funding is £132m lower in real terms versus 2018.

However, it is important to note that changes in methodology between funders and across time make comparisons to past analyses troublesome. For example, NIHR is able to separate core infrastructure support for BRCs from direct research spend and supports a number of national networks (e.g. CLAHRC, now ARC) while MRC combines core and research support within individual programme awards. Over time, increased use of automated coding has changed how – or how much – data is included as direct versus indirect for our analyses.

**Assessment of additional funding sources** – such as the Charity Research Support Fund (CRSF), support for health research from UK devolved Government and NHS support for clinical academics – have been part of this analysis report series since 2014. These sources of funding, outside of the funding collected in our analysis, are estimated to add a further £864.5m to the support for health research in the UK.

While these additional sources are based on estimates with varying methodologies, it is worth noting that this additional funding has – in a similar manner to indirect support – fallen by £32.4m in real terms; from £897m in 2018 and £865m in 2022 (see **Appendix 4** for more details).

20 A total of 29 AMRC medium to smaller charities also participated in the *Donation to Innovation* report and thus have 2004/05 data available.

## Estimation of total health-related research performed by UK institutions

Since 2009, the *UK Health Research Analysis* reports have provided estimates for the **total health related research and development expenditure** by UK public, charitable and private sector institutions for 2022. Calculation of this estimate takes a “top down” approach using information on total research and development activity across the research performing sectors and then determining how much would be considered health relevant. This estimation is based on information compiled by the Office for

National Statistics and used to estimate annual UK Gross Expenditure in Research and Development (GERD), full details of which can be found in **Appendix 5**.

The totals for research performed in the business, private not-for-profit (PNP), university and public research institute sectors for 2022 are displayed in **Figure 2** and **Table 2** below. The combined total expenditure estimated for these four research sectors is **£10.1bn**.

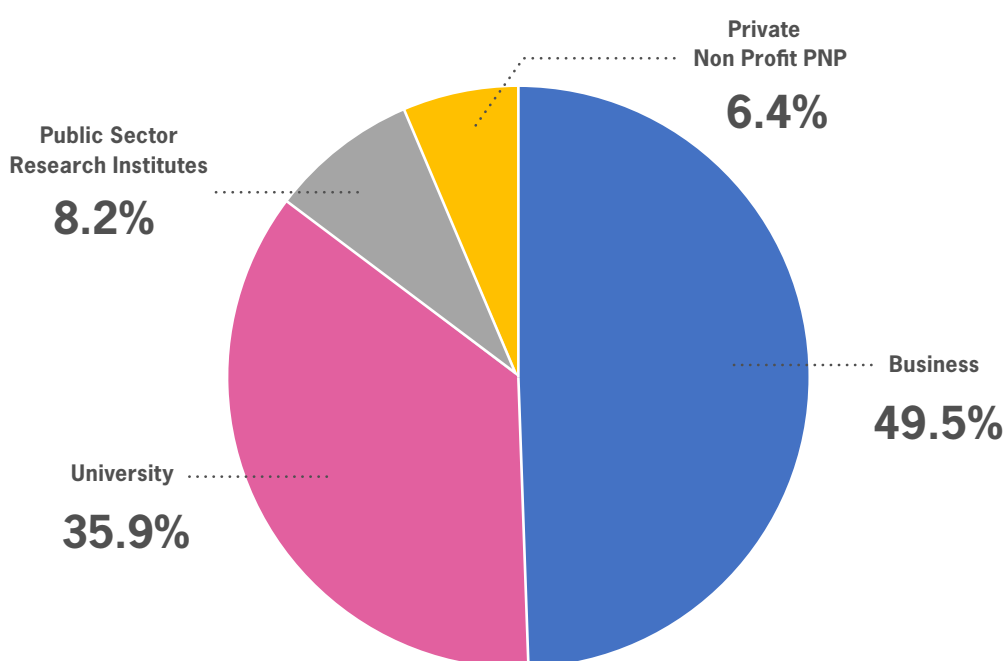


Figure 2 – Distribution of estimated total UK health research expenditure for 2022 by research sector

Performing Sector	2018 Estimate		2022 Estimate		Difference	
	Spend (real terms)	% of total	Spend	% of total	Spend	%
Business	£4.69bn	50.0%	£5.01bn	49.5%	£0.33bn	-0.6%
University	£3.41bn	36.3%	£3.64bn	35.9%	£0.23bn	-0.4%
Public Sector Research Institutes	£0.66bn	7.0%	£0.83bn	8.2%	£0.18bn	1.2%
Private Non Profit	£0.62bn	6.7%	£0.65bn	6.4%	£0.03bn	-0.2%
<b>TOTAL</b>	<b>£9.38bn</b>	<b>100%</b>	<b>£10.13bn</b>	<b>100%</b>	<b>£0.76bn</b>	<b>-</b>

Table 2 – Estimates for the total UK health-relevant R&D expenditure

# Methods



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## Data Collection and Classification

152 participating organisations submitted information relating to 23,567 awards. This included 839 awards made outside the UK, to a total value of £215m. Of the awards made within the UK – and the focus of this analysis – 18,023 awards were considered direct awards, i.e. awards directly contributing towards research, and were fully coded using the HRCS and subject to validation prior to inclusion in the main analysis. A further 4,705 awards were classified as indirect awards, i.e. awards supporting research, for use in the separate infrastructure assessment. However, of these indirect awards 1,160 (24% of indirect records, only 6% by value) were submitted had sufficient information to show they were health relevance, but insufficient information to HRCS code or classify within our indirect funding assessment.

Data validation for direct awards constituted the following checks:

- the data must match the basic inclusion criteria for the analysis
- the award had sufficient detail to allow accurate HRCS coding
- the award had sufficient detail to allow accurate calculation of an annualised value for activity in the 2022 reporting period
- de-duplication assessment to ensure any matching awards submitted by multiple funders (e.g. co-funded awards) only reported each funder's contribution

Each funder was responsible for extracting the necessary data for their health relevant research portfolio to be categorised using standardised HRCS coding. Full details of this process are available on the HRCS website ([www.hrcsonline.net](http://www.hrcsonline.net)) but to summarise, each award was assigned up to two Research Activities (four for large programmes) according to the type of research performed and up to five Health Categories related to the disease or condition of interest. Fully coded data was returned using a standard format and each funder has provided a

commentary describing any changes or caveats pertaining to their data submission.

Following the publication of our third analysis in 2014 a new methodology for classification using HRCS became available. Subscription to the Digital Science *Dimensions*<sup>21</sup> platform ([www.dimensions.ai](http://www.dimensions.ai)) allows access to automated HRCS coding (“auto-coding”) for awards based on their publicly available titles and abstracts. There is also a coding support tool for manual input of titles and abstracts to allow some limited coding of non-public award data. Since 2018, several funders with access to *Dimensions* have switched from manual coding to auto-coding for their submissions; a factor which must be considered when attempting to compare the resulting analyses with past submissions.

Finally, to obtain a value for the award in our reporting period of 2022, we used a calculation of the overall award value based on the award's duration within the 2022 calendar year **or** an actual expenditure value if available. This is consistent with methods used for previous reports, to ensure the values presented here are our best estimates for expenditure in 2022. Please note that all comparisons with previous report data uses a ‘real terms’ value, adjusted for inflation.

Further details can be found in the expanded methods section, **Appendix 11**. This includes:

- further details on the data analysis methods used
- oversight and Ownership of the data
- understanding the Health Research Classification System
- understanding the results of the analysis

We recommend those unfamiliar with the HRCS read this section carefully before reviewing the rest of this report. **We also strongly recommend [speaking with the project management team directly before undertaking further analysis using the 2022 public dataset](#)**, which is made available via the HRCS website under a [creative commons licence](#).

21 Digital Science (2018) *Dimensions* [Software] available from <https://app.dimensions.ai>. Last accessed on 30/06/2023, under licence agreement. For more information contact [info@dimensions.ai](mailto:info@dimensions.ai)

# Detailed Analysis: Research Activity



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# Detailed Analysis: Research Activity

## Distribution of funding across Research Activities in 2022

The distribution of the collective research portfolio for the 18,023 awards made within the UK by all 152 funding organisations across the eight major HRCS Research Activity groups is shown in **Figure 3**.

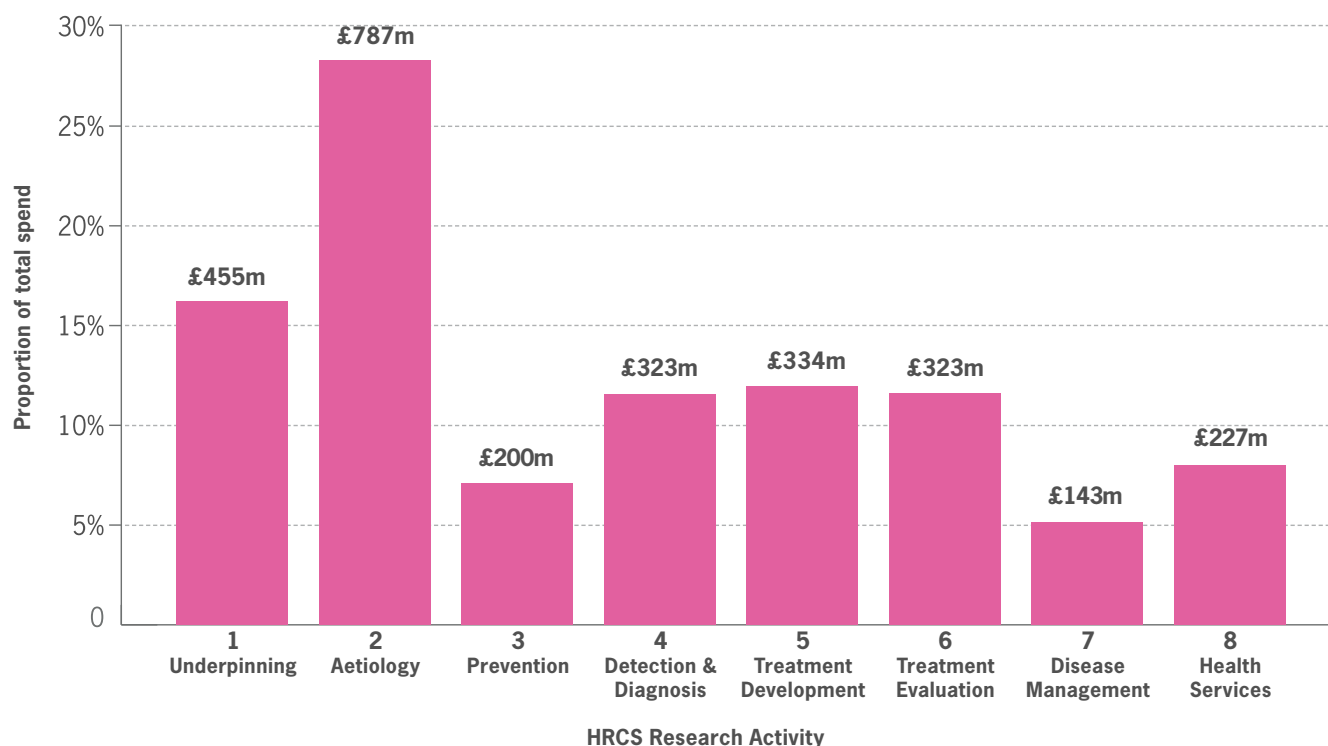


Figure 3 – Distribution of direct health research expenditure by HRCS Research Activity in 2022

Research Activity Group	#Awards	Award Value	% Total
1 Underpinning	2,531	£455m	16.3%
2 Aetiology	5,691	£787m	28.3%
3 Prevention	937	£200m	7.1%
4 Detection and Diagnosis	2,241	£323m	11.6%
5 Treatment Development	2,203	£334m	12.0%
6 Treatment Evaluation	1,802	£323m	11.6%
7 Disease Management	1,238	£143m	5.1%
8 Health Services	1,379	£227m	8.1%
<b>Grand Total</b>	<b>18,023</b>	<b>£2.79bn</b>	<b>100.0%</b>

Table 3 – Total awards and expenditure value for 2022 by HRCS Research Activity for all direct awards submitted to this analysis



### Underpinning and Aetiology

Just under half of all funding is concentrated in *Underpinning and Aetiology* (45%). Underpinning focuses on understanding normal biological, psychological and socioeconomic processes which forms the basis for subsequent research, whereas Aetiology looks at the risks, causes and development of disease. Both

*Underpinning and Aetiology* are considered together as areas of basic research, although not all is laboratory based; within research activity subgroups include coding options methodology and research design, population surveillance and infrastructure support. For example, most epidemiological studies will be coded under *Aetiology*.

---

### Prevention

*Prevention* constitutes 7.1% of funding and is focused on primary preventions (i.e. direct interventions to prevent disease) and to promote wellbeing (i.e. indirect interventions to reduce the risks of ill health). Areas

of research coded to *Prevention* include vaccines and preventative medicines alongside behavioural and environmental interventions, from initial conception to translational activity.

---

### Detection/Diagnosis, Treatment Development and Treatment Evaluation

Collectively these three research activity groups cover areas of translational research, building on previous underpinning/aetiological research to develop new procedures to monitor and treat disease. *Detection and Diagnosis* (11.6%) focuses on biomarker discovery and development, the use of new diagnostic technologies and

population screening. *Treatment Development* (12.0%) begins the translation of basic research into experimental medicine in preclinical settings and/or model systems, while *Treatment Evaluation* (11.6%) involves testing and evaluation of interventions in human clinical/applied settings, such as therapeutic trials.

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### Disease Management and Health Services

Research in the processes of healthcare will most commonly be coded to one or other of these research activities. *Disease Management* (5.1%) covers research on individual patient needs and practitioner experiences, including research into quality of life, disease self-

management and palliative care. *Health Services* (8.1%) examines healthcare at an organisational level, including service provision as well as welfare, economic and policy issues.

## Changes in Research Activity 2004/05 – 2022

Before interpreting the changes in distribution of total UK funding, it is important to note that due to the overall increase in research expenditure the funding captured by this analysis of Research Activity has doubled in real terms; from 1.37bn to £2.79bn.

In comparing the distribution of research activity funding in 2022 to previous *UK Health Research Analyses* there has been a noticeable shift in the proportion of total expenditure, primarily from basic discovery research to research with an intent to translate (see **Figure 4** and **Table 4**).

The proportion of funding for the research activity groups (1 & 2) which equate to basic discovery research have both decreased, the proportion of *Underpinning* research has fallen consistently across each successive analysis, falling by 17.3% from 2004 to 2022, equating to a small decrease in real terms spending (£7m). Similarly, the proportion of *Aetiology* research has also reduced by 6.5% in the same period, albeit with an increase in real terms funding (of £310m).

Relative decreases in ‘basic science’ are offset by the increases in other Research Activities focused on translation of research and application in healthcare and clinical settings; *Prevention, Detection and Diagnosis, Treatment Development, Treatment Evaluation, Disease Management and Health Services* funding have collectively grown as a proportion of health research total since 2004/05.

As noted in the **Combined Spend Analysis** (see **page 17**), while overall spend has increased since 2004/05 we have observed a decrease in since 2018 focused on ‘indirect’ support funding. In terms of the direct spend classified by Research Activity, growth is near zero (up only £23m, 0.8%) since 2018. In this four-year period, we observe accelerated reduction in ‘basic science’ spending (-£146m for *Underpinning*, -£61m for *Aetiology*). Other Research Activities continued to receive more in real terms spending versus 2018.

## Detailed Analysis Research Activity

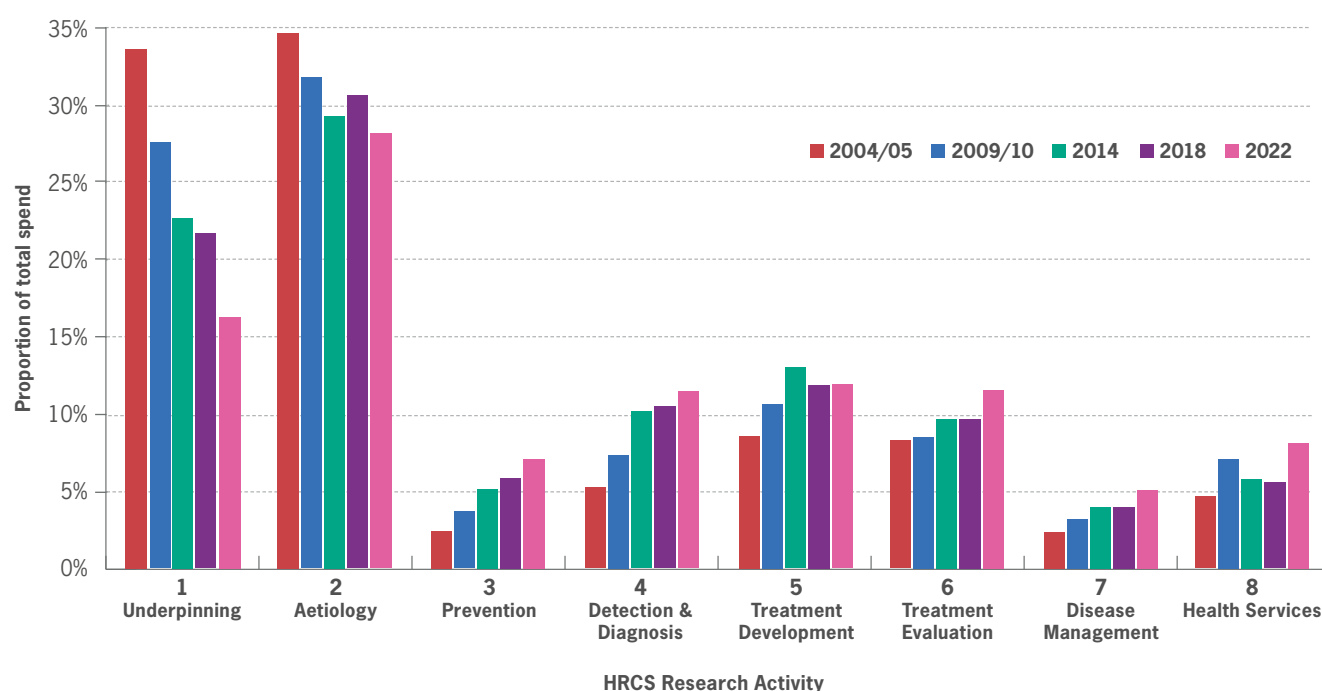


Figure 4 – Funding distribution for all contributing organisations by HRCS Research Activity across the five UK Health Research Analyses 2004/05 to 2022

Research Activity Group	2004/05		2009/10	2014	2018	2022		Difference vs 04/05	
	Spend	% of total	% of total	% of total	% of total	Spend	% of total	Value	%
1 Underpinning	£462m	33.6%	27.6%	22.7%	21.7%	£455m	16.3%	-£7m	-17.3%
2 Aetiology	£477m	34.7%	31.8%	29.3%	30.6%	£787m	28.2%	£310m	-6.5%
3 Prevention	£34m	2.5%	3.7%	5.2%	5.9%	£200m	7.1%	£165m	4.7%
4 Detection and Diagnosis	£72m	5.3%	7.3%	10.2%	10.5%	£323m	11.6%	£251m	6.3%
5 Treatment Development	£118m	8.6%	10.7%	13.0%	11.9%	£334m	12.0%	£216m	3.4%
6 Treatment Evaluation	£114m	8.3%	8.5%	9.7%	9.7%	£323m	11.6%	£209m	3.3%
7 Disease Management	£32m	2.3%	3.2%	4.0%	4.0%	£143m	5.1%	£111m	2.8%
8 Health Services	£65m	4.7%	7.1%	5.8%	5.6%	£227m	8.1%	£162m	3.4%
<b>GRAND TOTAL</b>	<b>£1.37bn</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>£2.79bn</b>	<b>100.0%</b>	<b>£1.40bn</b>	<b>0.0%</b>

Table 4 – Funding distribution for all contributing organisations by HRCS Research Activity across the five UK Health Research Analyses 2004/05 to 2022

## Trend assessment; focus on translational research

The data collected across the five *UK Health Research Analysis* reports has shown that while there is continued willingness to invest in basic discovery research – increasing in real terms and still account for almost half of all research activity - the growth in health research funding is disproportionately in favour of more translationally orientated research activities, i.e. research that aids translating scientific discoveries into new treatments and healthcare benefits or projects dedicated to progress products from early development towards higher technology readiness levels.

These changes appear to be shared across multiple funders and time periods, suggesting this transition is part of a shared, national shift in policy. These changes can probably be traced to the influential review of UK health research funding conducted by Sir David Cooksey in 2006<sup>22</sup> - which used data from the original *UK Health Research Analysis 2004/05* as part of its evidence base - and its recommendation that increases to health research funding should focus on “*translating ideas from basic and clinical research into the development of new products and approaches to treatment of disease and illness*”.

While the same trends have been observable at each report in our *UK Health Research Analysis* series, the shift has been more prominent between 2018 and 2022 because of pandemic-related spending and a focus on treatments for COVID-19 and recovery post-pandemic.

The reduction in ‘indirect’ support and negligible growth in direct spending – most keenly felt in proportions dedicated to *Underpinning and Aetiology* – may therefore be an artefact of the reduced capacity of charitable funders to support research activity since the pandemic. Despite an increase in the number of charitable organisations participating (126 in 2022 vs 96 in 2018) the overall spend by charities in this analysis is £208m less than 2018. For more on the impact of this spending change, see page 45.

Similarly, the increase in translational and health delivery-related research is in part due to the temporary uplift in

spending on COVID-19 related research begun in 2020 and the sustained support for post-pandemic research with its focus on repairing society and an over-stretched healthcare system. For example, research on Mental Health – a key focus of post-pandemic recovery research – has increased significantly since 2018, the majority of which is focus on treatment evaluation, and service provision.

Research in *Prevention* was highlighted in the 2004/05 analysis as under-funded and this evidence was used to help make the case for establishing the £34m National Prevention Research Initiative (NPRI) which supported 74 projects from 2005-2014<sup>23</sup>. This investment has contributed to expenditure for prevention research increasing five-fold from a low base of £34m in 2004/05 to over £163m in 2018. Continued interest in supporting prevention research and building on the co-ordinated NPRI approach resulted in a new £50m cross-funder initiative, the UK Prevention Research Partnership (UKPRP) announced in late 2017, with awards starting in 2019 and still active during the 2022 analysis period, contributing to this uplift to £200m in 2022, alongside increased interest in vaccine research due to the pandemic.

The continued proportional increase in translation-related health research is driven by a wide range of initiatives, schemes and consortia:

From UKRI:

- MRC’s budget for [directed translational research](#) has risen from <£10m per annum in 2008/09<sup>24</sup> to over £80m in 2022, and includes a range of open calls for early-stage commercialisation (e.g. Developmental Pathway Funding Scheme, DPFS) and partnerships with industry (e.g. MRC-AstraZeneca Centre for Lead Discovery, CLD)
- UK Regenerative Medicine Platform (UKRMP) is a £42 million national initiative addressing the key translational challenges in regenerative medicine, led by the BBSRC, EPSRC and MRC

22 Sir David Cooksey, December 2006. “A review of UK health research funding” DOI [10.1136/bmj.39059.444120.80](https://doi.org/10.1136/bmj.39059.444120.80)

23 National Prevention Research Initiative Report (2015) “Initiative outcomes and future approaches” <https://www.ukri.org/publications/npri-initiative-outcomes-and-future-approaches/>

24 MRC *Translational Research Evaluation* 2008-2018, published September 2019 <https://www.ukri.org/publications/mrc-translational-research-evaluation-report/>

- Innovate UK supports several key biomedical initiatives, such as the Cell and Gene Therapy and Medicines Discovery Catapults
- Research England manages national schemes designed to foster connectivity across sectors and regions, including the Strength in Places Fund which supports several health-related programmes including the £38m [Living Laboratory for Precision Medicine](#)

From health administrations:

- since 2004/05, NIHR has created Biomedical Research Centres (BRCs) and Invention for Innovation (i4i) to help drive translational research funding

From charities:

- enhanced translational funding from medical research charities has further supported this funding environment, such as CRUK's [Drug Development Units](#)

While these examples focus on the larger funders of health research, it is important to note that many smaller funders also contribute to this continued expansion of translational research. Indeed, many charities support more translational research than basic science while others, such as LifeArc, are dedicated to helping bridge the gap from bench to bedside.

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## Changes in Funding Distribution by Research Activity Sub-Group

Assessment of the Research Activity sub groups shows that the changes in funding seen at overall group level is largely mirrored within sub groups. Notable exceptions to this are:

- The reduction in *Underpinning* (33.6% in 2004/05, 16.3% in 2022) is almost exclusively due to the most used code, **1.1 Normal biological development and functioning**. The proportion of research coded as **1.1** has decreased by 16.2% since 2004/05 (-£52m in real terms), including a decrease of 4.2% since 2018 (-113m in real terms)
- The proportion of research coded *Aetiology* has decreased when comparing 2022 with 2004/5 (-6.4%). This is largely due to the most common sub groups within *Aetiology*, **2.1 Biological and endogenous factors** and **2.2 Factors relating to the physical environment**, which decreased by 5.2% and 1.9% respectively. Although spend in these categories has decreased as a proportion of overall spend, spend **in real terms** has increased since 2004/05 with **2.1** increasing by £175m and **2.2** increasing by £24m. However, all sub groups except **2.3 Psychological, social and economic factors** and **2.5 Research design and methodologies** have seen both proportional and real terms decreases in funding since 2018

- Changes in the other Research Activity groups are sustained, but less dramatic on a sub group level between reporting periods. The largest changes within each group are:
  - Prevention; **3.4 Vaccines** – increased by 1.9% since 2004/05 and 1.1% since 2018
  - Detection and Diagnosis; **4.1 Discovery and preclinical testing of markers and technologies** – increased by 3.4% since 2004/05
  - Treatment Development; **5.1 Pharmaceuticals** – increased by 2.4% since 2004/05 (+0.7% since 2018)
  - Treatment Evaluation; **6.1 Pharmaceuticals** – increased by 1.6% since 2004/05 (+0.8% since 2018)
  - Disease Management; **7.1 Individual care needs** – increased by 1.7% since 2004/05 (+0.8% since 2018)
  - Health Services; **8.1 Organisation and delivery of services** – increased by 1.8% since 2004/05 (+1.5% since 2018)

A full table of these data can be found in **Appendix 6**.

# Detailed Analysis: Health Categories

The logo for the UK Clinical Research Collaboration is a yellow triangle pointing downwards, with a jagged, flame-like border. The text "UK CLINICAL RESEARCH COLLABORATION" is written in white, uppercase letters inside the triangle, following its shape.

UK  
CLINICAL  
RESEARCH  
COLLABORATION

igniting our potential

# Detailed Analysis: Health Categories

## Distribution of funding across Health Categories

There are 21 distinct Health Categories used in the HRCS, of which 19 related to a specific area of health or disease. The health categories cover both normal function and disease state. For example, studies of liver diseases, such as cirrhosis, and normal hepatic function will both be coded under *Oral and Gastrointestinal*. It is also important to consider that many research projects span a range of health categories, where multiple codes can be applied to each award (5 maximum). For example, studies of sexually transmitted diseases will often be classified as both Infection and Reproduction.

The two remaining Health Categories are used slightly differently. The *Disputed Aetiology and Other* category

is used for diseases of unknown or disputed aetiology or research that is not applicable to the other health categories<sup>25</sup>, and *Generic Health Relevance* is used for studies that are applicable to all diseases and/or general health. *Generic Health Relevance* can therefore cover a wide range of research types, from basic cell and molecular biology to geographical evaluation of health services and is often used in coding for large programme awards with a broad research remit.

The distribution of direct research expenditure by HRCS Health Category is shown in **Figure 5** and **Table 5**, below.

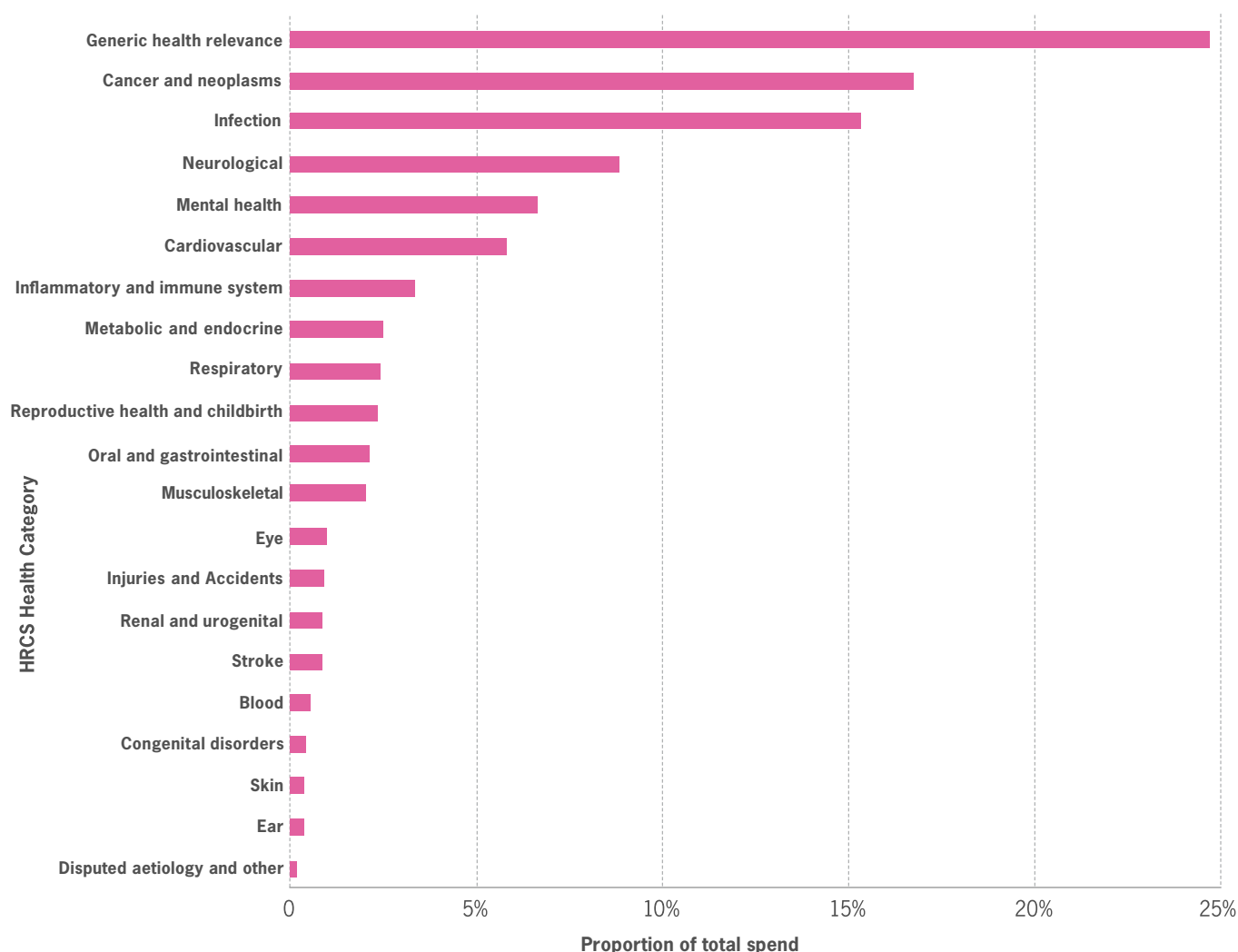


Figure 5 – Distribution of direct health research expenditure by HRCS Health Category in 2022

25 Examples of disputed aetiology include myalgic encephalomyelitis (ME). The ‘other’ category is also used for other social service research for at risk groups, such as young people at risk of domestic violence, and studies of animal welfare.

Health Category	#Awards	Award Value	% Total
Disputed aetiology and other	77	£7.0m	0.3%
Ear	90	£12.5m	0.4%
Skin	134	£13.1m	0.5%
Congenital Disorders	111	£13.9m	0.5%
Blood	110	£17.8m	0.6%
Stroke	229	£26.5m	0.9%
Renal and Urogenital	226	£26.9m	1.0%
Injuries and Accidents	147	£27.4m	1.0%
Eye	264	£30.2m	1.1%
Musculoskeletal	534	£59.2m	2.1%
Oral and Gastrointestinal	464	£61.6m	2.2%
Reproductive Health and Childbirth	450	£68.4m	2.4%
Respiratory	369	£70.5m	2.5%
Metabolic and Endocrine	536	£71.3m	2.6%
Inflammatory and Immune System	679	£96.3m	3.4%
Cardiovascular	1,684	£164.3m	5.9%
Mental Health	1,275	£187.4m	6.7%
Neurological	1,873	£247.9m	8.9%
Infection	2,216	£429.7m	15.4%
Cancer and neoplasms	3,085	£469.3m	16.8%
Generic Health Relevance	3,470	£691.5m	24.8%
<b>TOTAL</b>	<b>18,023</b>	<b>£2.79bn</b>	<b>100%</b>

Table 5 – Total awards and expenditure value for 2022 by HRCS Health Category for all direct awards submitted to this analysis

## Changes in Health Categories 2004/05 to 2022

Broadly the funding landscape for HRCS Health Categories remains relatively stable across the 18 years from earliest analysis in 2004/05 to the latest in 2022. As a proportion of overall funding available, only six Health Categories saw variations above  $\pm 1\%$  (see **Figure 6** and **Table 6**).

*Generic Health Relevance* remains the largest area of research funding in 2022 (£691m, 24.8%). While the amount of funding has almost doubled in real terms (from £347m in 2004/05) the proportion of total funding in this area has remained unchanged since 2004/05.

*Cancer and neoplasms* remains the second highest funded Health Category, with an increase in real terms funding of

£191m since 2004/05. However, in the last eight years we observe a decrease in the proportion of total funding, by 1.0% between 2014 and 2018 and by 2.1% between 2018 and 2022 and a decrease in real terms funding of £54m since 2018. Several prominent funders of cancer research, including Cancer Research UK (the largest single funder of Cancer research<sup>26</sup>), have seen decreases across the last two analyses covering an eight-year reporting period. While decreases in funding may have been observable pre-2020, *Cancer and neoplasms* research is predominantly charity funded, thus the significant impact on charitable funding caused by the pandemic has disproportionately affected support for this area of health research.

26 In 2014, the proportion of Cancer research funding provided by CRUK was 63%, however the formation of the Francis Crick Institute in 2015 was facilitated by the merger of both CRUK's London Research Institute (LRI) and MRC's National Institute for Medical Research (NIMR). Due to the nature of this analysis the research at LRI attributed to CRUK is now attributed directly to the Crick which, in 2022, provided a further 3.3% of Cancer research funding. This research would be partly supported through CRUK core support contribution, which in 2021/22 was £38m. See the appropriate funder sections of **Appendix 1** for further details on Crick core contributions.



## Detailed Analysis: Health Categories

We observe a similar – though far less pronounced – affect in *Cardiovascular* research, sixth by value and predominantly funded by the British Heart Foundation, where previous growth in funding was reversed; decreasing by just £5.0m between 2018 and 2022.

The third largest Health Category, *Infection*, shows the most significant change over the 18-year reporting period. The proportion of total funding has increased by 6.4% (from 9.0% in 2004/05 to 15.4% in 2022) with a real terms funding increase of £305m, almost quadrupled the value first reported in 2004/05 (£124m vs £430m in 2022). This trend has at least three contributory causes:

- increasing prioritisation of research on antimicrobial resistance
- inclusion of additional organisations with a strong focus on infectious diseases (e.g. Innovate UK) into the analyses since 2014
- since 2018, a significant investment on COVID-19 and the broader impacts of the pandemic and associated policies

The classifications of *Neurological and Mental Health* within the HRCS require some explanation before any conclusions on funding distributions can be drawn. HRCS *Neurological* refers to research conducted directly on the nervous system and the brain - the wiring - which includes neurodegenerative conditions such as Alzheimer's, Parkinson's and Dementias. HRCS *Mental Health* refers to research into cognition and behaviour which includes depression, addiction, schizophrenia and a range of other disorders classified by the patient's mental state, cognitive ability and behaviour. While this segregation is useful for analyses of this type to differentiate research in different

contexts, the public view of what constitutes mental health is broader; many charities and even other classification systems consider dementias to be within 'mental health' groupings. As a result, it is often helpful to view these health categories together.

In this analysis the proportion of *Neurological* funding has decreased by 2.7%, falling from 11.6% in 2004/05 to 8.9% in 2022, whereas *Mental Health* funding has increased by 2.4%, from 4.3% to 6.7%. In both categories real terms funding has grown (by £89m and £129m respectively). If viewed collectively, these two Health Categories have more than doubled in funding over 18 years with almost no change in combined proportion of total funding.

Only one category, *Ear*, showed a decrease in real terms funding over 18 years; from £17.3m in 2004/05 to £12.5m in 2022 (-£4.8m). Funding for this Health Category - which is focused on research into hearing and hearing loss - is relatively volatile and from only a relatively small number of awards, making it difficult to determine if this is a genuine trend.

## Detailed Analysis: Health Categories

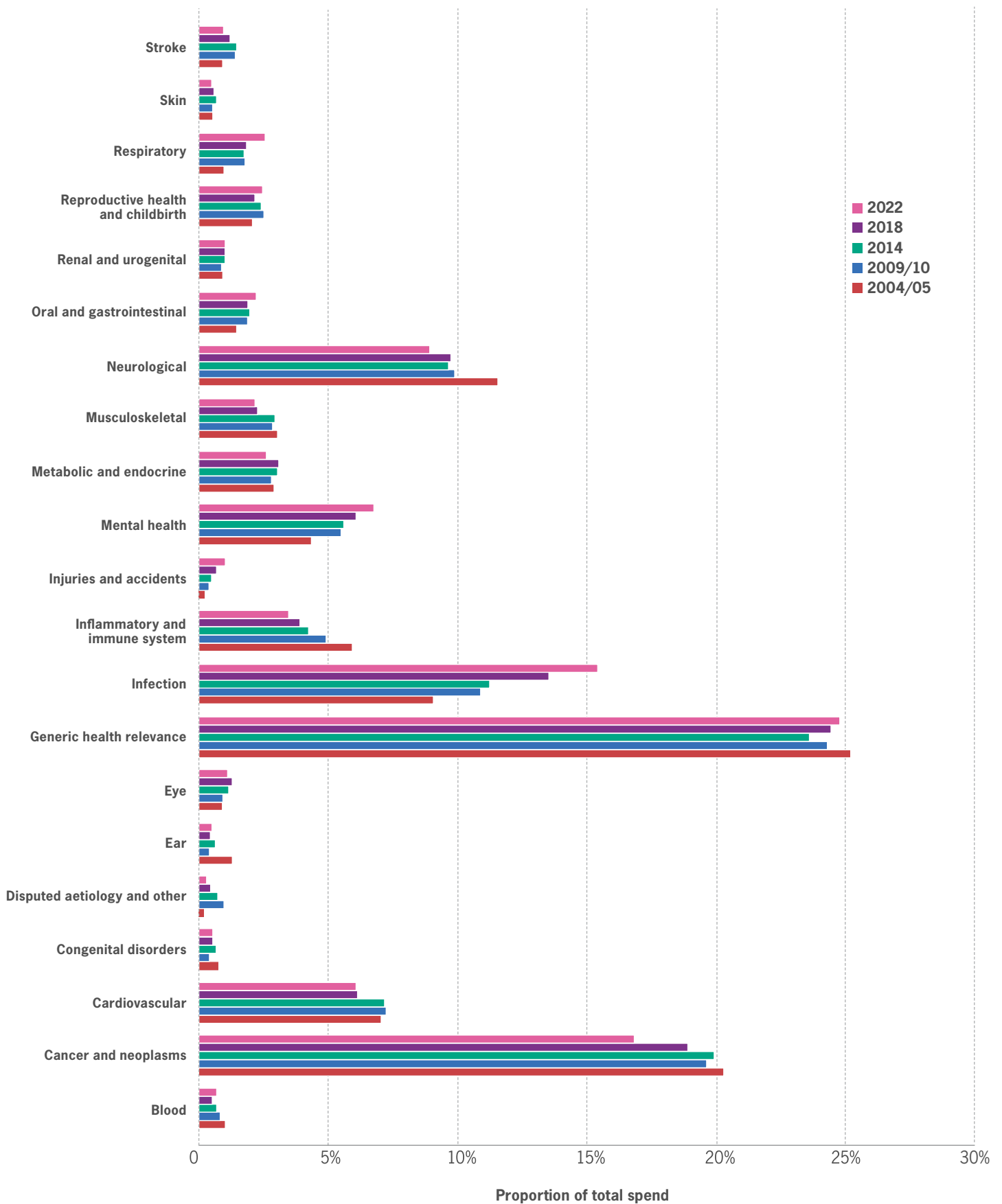


Figure 6 – Distribution of funding from all contributing organisations by HRCS Health Category across the five UK Health Research Analyses 2004/05 to 2022

## Detailed Analysis: Health Categories

Health Category	2004/05		2009/10	2014	2018	2022		difference	
	Value	%	%	%	%	Value	%	vs. 04/05	vs. 2018
Blood	£13.8m	1.0%	0.8%	0.7%	0.5%	£17.8m	0.6%	-0.4%	0.2%
Cancer and neoplasms	£278.6m	20.3%	19.6%	19.9%	18.9%	£469.3m	16.8%	-3.5%	-2.1%
Cardiovascular	£96.3m	7.0%	7.2%	6.8%	6.1%	£164.3m	5.9%	-1.1%	-0.2%
Congenital Disorders	£9.9m	0.7%	0.4%	0.7%	0.5%	£13.9m	0.5%	-0.2%	0.0%
Disputed aetiology and other	£2.4m	0.2%	1.0%	0.7%	0.4%	£7.0m	0.3%	0.1%	-0.2%
Ear	£17.3m	1.3%	0.3%	0.6%	0.4%	£12.5m	0.4%	-0.8%	0.1%
Eye	£12.0m	0.9%	0.9%	1.1%	1.3%	£30.2m	1.1%	0.2%	-0.2%
Generic Health Relevance	£346.2m	25.2%	24.2%	23.6%	24.4%	£691.5m	24.8%	-0.4%	0.3%
Infection	£124.1m	9.0%	10.8%	11.2%	13.5%	£429.7m	15.4%	6.4%	1.9%
Inflammatory and Immune System	£80.7m	5.9%	4.9%	4.2%	3.9%	£96.3m	3.4%	-2.4%	-0.4%
Injuries and Accidents	£3.2m	0.2%	0.4%	0.5%	0.7%	£27.4m	1.0%	0.8%	0.3%
Mental Health	£58.8m	4.3%	5.5%	5.5%	6.1%	£187.4m	6.7%	2.4%	0.7%
Metabolic and Endocrine	£39.4m	2.9%	2.8%	3.0%	3.0%	£71.3m	2.6%	-0.3%	-0.5%
Musculoskeletal	£41.6m	3.0%	2.8%	2.9%	2.2%	£59.2m	2.1%	-0.9%	-0.1%
Neurological	£158.7m	11.6%	9.8%	9.6%	9.7%	£247.9m	8.9%	-2.7%	-0.8%
Oral and Gastrointestinal	£19.3m	1.4%	1.8%	1.9%	1.9%	£61.6m	2.2%	0.8%	0.3%
Renal and Urogenital	£12.0m	0.9%	0.8%	1.0%	1.0%	£26.9m	1.0%	0.1%	0.0%
Reproductive Health and Childbirth	£27.9m	2.0%	2.5%	2.4%	2.1%	£68.4m	2.4%	0.4%	0.3%
Respiratory	£13.0m	0.9%	1.7%	1.7%	1.8%	£70.5m	2.5%	1.6%	0.7%
Skin	£6.6m	0.5%	0.5%	0.7%	0.5%	£13.1m	0.5%	0.0%	-0.1%
Stroke	£12.2m	0.9%	1.3%	1.4%	1.2%	£26.5m	0.9%	0.1%	-0.2%
<b>TOTAL</b>	<b>£1.37bn</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>£2.79bn</b>	<b>100%</b>		

Table 6 – Funding distribution for all contributing organisations by HRCS Health Category across the five UK Health Research Analyses from 2004/05 to 2022

## DALY comparison

There are multiple factors that influence the level of research funding in any area, including scientific opportunity, research workforce capacity, ‘researchability’ or tractability, burden of disease and fund-raising potential. Burden of disease is a factor that has previously been used as a comparator for research investment across different diseases. There are many metrics to assess burden of disease such as incidence, prevalence, mortality, morbidity and length of hospital stay. Comparison with each of these can lead to different interpretations about the appropriate relationship with research funding levels.

Disability Adjusted Life Years (DALYs) are frequently used as a measure of burden of disease. DALYs are calculated by combining two established metrics; years of life lost from mortality (YLL)<sup>27</sup> and years lost due to disability (YLD)<sup>28</sup>. The former uses incidence of disease and life expectancy at death as a measure of mortality whilst the latter adjusts prevalence for the severity of disease as a measure for morbidity. The resulting figure is the total number of years lost (i.e. 1 DALY = one lost year of ‘healthy’ life). The DALY rate used in this analysis is the proportion of DALY for a particular health category relative to the DALY total for the UK.

**Figure 7** presents a comparison of the proportion of research funding in 2022 across the health categories (all 152 funders) against the latest available UK DALY rates (2019) from the WHO Global Burden of Disease Project. The Health Categories have been combined as necessary to allow appropriate comparison with the WHO Global Health Estimates (GHE) disease coding system used for DALY data. Details of this disease mapping process are available in **Appendix 7**. It is important to note that two health categories, *Generic Health Relevance and Disputed Aetiology and Other* have no equivalent GHE codes and are omitted from this comparison. Therefore only 74% (£2.04bn) of spend is represented here.

Correlation analysis shows relatively poor matching of the UK’s burden of disease in DALY rates and the research funding available (Spearman’s coefficient 0.664). Cancer received both the highest proportion of 2022 spend

and highest DALY, with comparable proportions. Most Health Categories show research funding is lower than the comparative burden of disease, with difference being significant for the categories *Musculoskeletal, Respiratory, Oral and Gastrointestinal* and combined group *Blood/ Cardiovascular/Stroke*. In contrast *Inflammatory and immune system, Reproductive Health and Childbirth* and *Infection* all show a higher proportion of research funding than the corresponding UK DALY ranking. *Infection* showed the largest difference, reflecting a general trend for increased *Infection* funding already discussed.

While comparisons with such data are interesting, there are some important caveats which should be considered. Firstly, the burden of a disease is dependent on severity, duration and risk of premature mortality but this will not automatically correlate with the research costs involved. For example, research into *Injuries and Accidents* is part of HRCS coding and includes external injuries (fractures, burns and poisons) and intervention studies to prevent future accidents. This represents a very small proportion of research funding but the loss of life or quality of life through disability is considerable (6.5%).

Secondly, the relationship of UK research to global health issues is an important one. While mapped spending on *Infection* in the UK remains high (at 21.1%) the UK’s burden of disease due to infections is relatively low (4.0%). However, the global DALY loss due to infection is significantly higher (16.8%) and the UK research base is a key international resource for providing breakthroughs in disease modeling, pathogen profiling and new avenues for treatments. As the COVID-19 pandemic has made plain, maintaining a research level above current disease burden conditions remains prudent given the potentially catastrophic impact of future pandemics.

Thirdly, while both HRCS and GHE disease classifications show similarities, the mapping is imperfect. For example, GHE data for inflammatory disease is limited to rheumatoid arthritis, whereas HRCS’s *Inflammatory and Immune System*, covers a broader range of inflammatory conditions (e.g. lupus and autoimmune diseases) as well as

27 YLL = Number of Deaths x Life Expectancy at age of death.

28 YLD = Prevalence x Disability Weighting (a measure of disease severity).

## Detailed Analysis: Health Categories

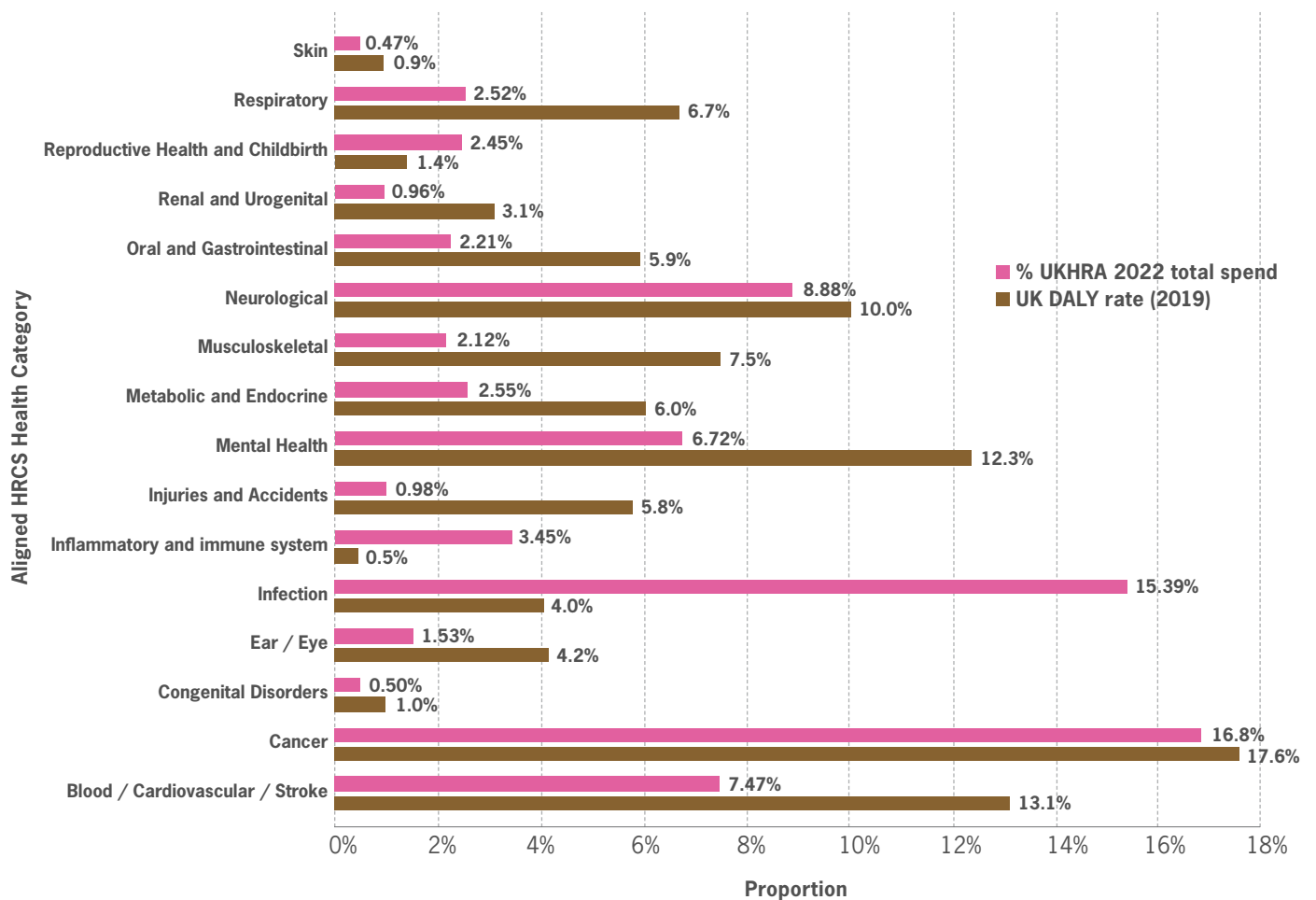


Figure 7 – Comparison of Disability Adjusted Life Years (DALY) rates for the UK in 2019 (brown bars) and the proportion of HRCS health category spending in 2022 (pink bars)

underpinning studies of normal immune function. There is also no suitable GHE classification for *Generic Health and Disputed Aetiology and Other*, so 25% (£698m) of research funding is not included in comparison with DALY rates. There is also no method to determine GHE classification for the £1.38bn in indirect funding listed in this analysis.

This report has clearly shown that while translating new discoveries into health benefits is still a UK health research priority, there is still a strong focus on basic science and the infrastructure to support it. While the ultimate goal is to solve societal health problems, the focus of funding towards developing the capacity/capability to perform research is as important as the burden a specific disease may have on the UK population.

Finally, the outcomes resulting from research are often unexpected, particularly so for basic/fundamental or discovery science. Experience shows that research has wide spill-over benefits to areas beyond that originally envisaged.

# Geographical Distribution



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## Geographical Distribution

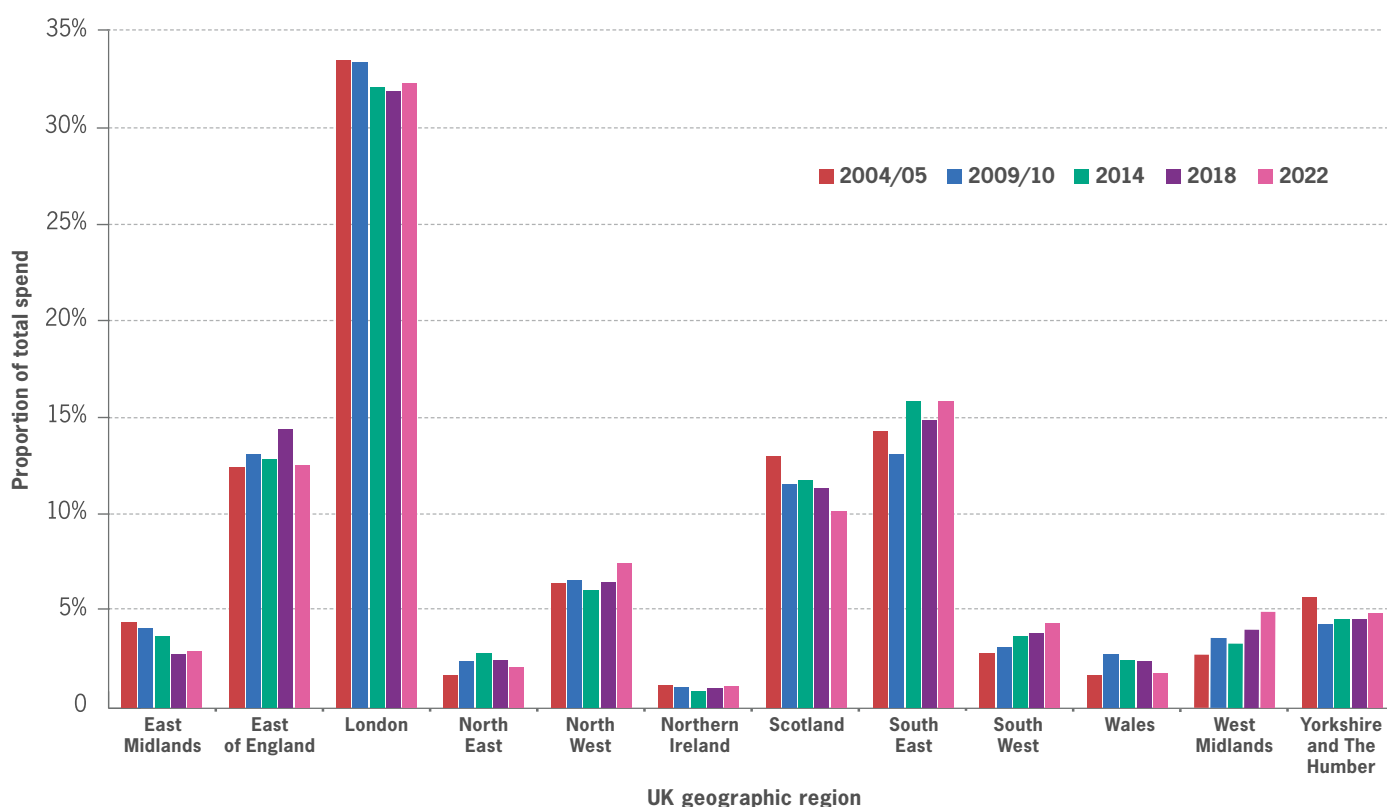


Figure 9 – Proportion of combined spend by geographical distribution across the UK Health Research Analysis series 2004/05 to 2022

While the majority of regions attract a broadly stable proportion of UK health research funding, there are some general trends seen across 19 years of data. Both the South West and West Midlands show small but consistent rises in proportion of funding between 2004/05 and 2022, while the East Midlands shows small but consistent decreases over the same period. Funding to Scotland showed the most dramatic difference between 2018 and 2022, falling from 11.3% to 10.1%.

It is important to note that this analysis looks at only the lead institution for each award funded. As research projects are rarely carried out by a single institution, these results show a simplified version of a more complex picture of collaboration across the UK. For example, larger awards are more likely to involve a range of institutions, often distributed across the UK, which would not be represented using this method.

Methodology caveats aside, the regional distribution of health research funding - particularly the clustering around London, Oxford and Cambridge - is not surprising. All three have a prolonged history of medical research as well as a considerable capacity and infrastructure to support a high proportion of the UK's research funding.

Likewise, proximity to the funder may be a factor. A larger proportion of spend from non-HRAF funders is concentrated in London (40%) compared to HRAF members (30%), however the difference between the combined total and HRAF is small (1.5%), largely driven by The Francis Crick Institute. Indeed, several of the non-HRAF funders are either located in the capital and/or have a specific remit to fund London institutions (e.g. hospital charities).



# Distribution of Funding between Charity and Public Sector

The logo for UK Clinical Research Collaboration is a yellow triangle pointing downwards, with a jagged, flame-like border. The text "UK CLINICAL RESEARCH COLLABORATION" is written in white, uppercase letters inside the triangle, following its shape.

UK  
CLINICAL  
RESEARCH  
COLLABORATION

igniting our potential

# Distribution of Funding between Charity and Public Sector

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Since 2014 we have made great efforts to include a wider range of organisations into the *UK Health Research Analysis* series, with the inclusion of UK Government departments beyond DHSC, a range of professional associations (such as medical Royal Colleges and Academies) and a substantial number of medical charities, many of them members of the AMRC.

For the purposes of this analysis, we have divided organisations into four groups:

- **UK Research and Innovation (UKRI)** – comprising of nine partner organisations include four HRAF partners (MRC, EPSRC, BBSRC, ESRC) constituting 40% of total direct UK health research spend
- **Health administrations** – comprising of the four health departments from across the UK constituting 23% of total direct UK health research spend
- **Charities / Non-profit** – comprising of the 124 AMRC member charities and four independent charities participating in this analysis constituting 36% of total direct UK health research spend
- **Other Government / Learned Societies / Professional Bodies** – the eight remaining organisations, the largest by value in the 2022 analysis being DEFRA and the Academy of Medical Sciences, constituting 1.2% of total UK health research spend

## Distribution of research activity funding by charity or public sector

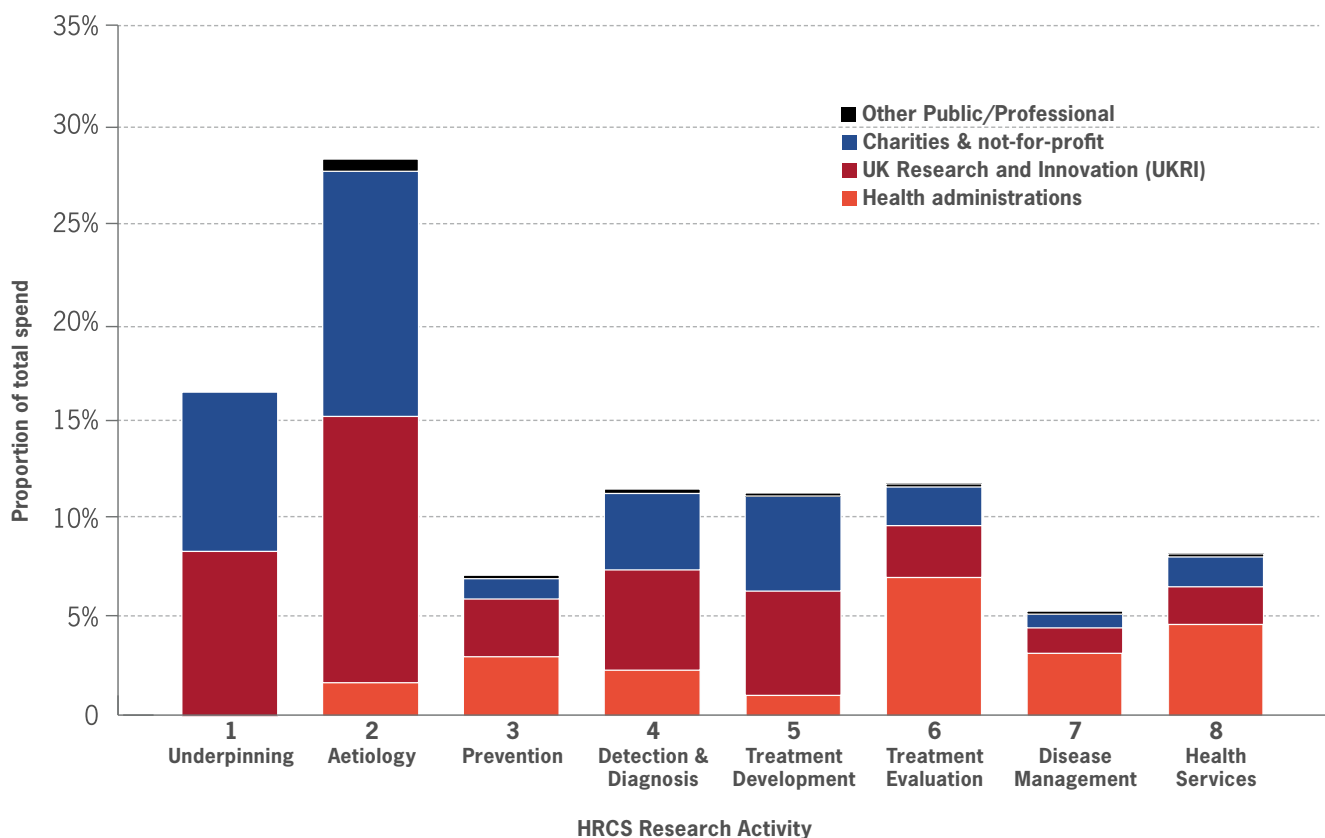
The distribution of combined total funding by research activity is shown in **Figure 10** below. A full breakdown of the data can be found in **Appendix 9**.

The majority of Charitable spend is in *Underpinning* and *Aetiology* (22% and 36%, respectively), with approximately a quarter of spend in *Detection and Diagnosis* and *Treatment Development* (12% and 16% respectively) which is consistent with determining the causes of disease and developing new strategies for both early diagnosis and novel treatments.

Similarly, UKRI also funding supports *Underpinning* (20%) and *Aetiology* (33%), a quarter on *Detection and Diagnosis* (12%) and *Treatment Development* (13%)<sup>30</sup>, with a slightly higher proportion of spend in *Prevention* than charities

(7.4% vs. 2.9%, respectively). Overall, rank correlation analysis shows that both charities and UKRI share very similar priorities in research activity funding (Spearman's rank = 0.93) which is consistent with both organisation groups focusing both on basic science and early-stage translational activity.

In contrast funding from Health administrations from the four nations of the UK is rarely in *Underpinning* or *Aetiology* (7.9% combined). Instead, funding is spent on *Treatment Evaluation* (30.6%), *Health Services* (20.1%) and *Disease Management* (13.8%), *Detection and Diagnosis* (10.1%) and *Prevention* (13.1%). This profile reflects the significant contribution of DHSC (91%) and the devolved health departments (9%) to applied and clinical health and care research.



**Figure 10 – Distribution of HRCS Research Activity Spend by Charity and Public funders, as a proportion of combined total expenditure in 2022**

<sup>30</sup> The inclusion of Innovate UK contributes a third (4%) of UKRI's spend on Treatment Development. The overall distribution for UKRI in 2022 (12.4%) and 2018 (12.0%) remains similar versus RCUK and Innovate UK in 2014 (12.5%).

### Distribution of health category funding by charity or public sector

The distribution of combined total funding by health category is shown in **Figure 11** on the next page. A full breakdown of the data can be found in **Appendix 9**.

The health administrations support the majority of funding for *Injuries and accidents* (70%), *Skin* (61%) and diseases of *Disputed Aetiology* (57%) research.

UKRI support the majority of *Blood* (59%), *Ear* (57%) and *Respiratory* (54%) research. UKRI also supports the majority of *Generic health relevance* research (53%, £368m), which is often used in conjunction with *Underpinning* in studies of basic biological process.

Charities support the majority of funding for *Cancer and neoplasms* (68%, £321m), primarily from Cancer Research UK (69%, £223m) although over 30 of the medium to smaller medical research charities also have a predominantly cancer-based portfolio. Similarly, 64% (£106m) of *Cardiovascular* funding is from medical research charities, the overwhelming majority from the British Heart Foundation (80%, £85m).

Funding for *Infection*, *Mental Health* and *Musculoskeletal* research is a somewhat shared priority, including from other Government bodies, learned societies and academies.

While some specific health categories may be favoured by one funder type, in general all three groups distribute their funding in a similar way. Correlation analysis shows that when funding for health categories are ranked by amount funded, charities, UKRI and other Government organisations tend to prioritise in a reasonably similar way (Spearman's coefficient 0.82 to 0.91)<sup>31</sup>. The reasons for this correlation are unclear but may relate to similar strategic priorities in public funding and/or the capacity for funding in certain areas.

As has been highlighted in earlier chapters of this report, the impact of the pandemic has had a considerable effect on funding of the UK's health research. In particular, the reduction in the total funding for research from charities is considerable; from 44% of total in 2018 to 36% in 2022, a loss in real terms of £208m. While this loss has been mitigated by increased contributions from public funders (+£61m from UKRI, +£138m from health administrations since 2018) this is the first report since 2004/05 to show a decrease in overall health R&D spend. Future reporting is needed to monitor this worrying trend, to determine how transient the pandemic-related pinch in charitable funding will last and what this may mean for the future distribution of health research funding in the UK.

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<sup>31</sup> This correlation is near identical to the same comparison in the 2018 analysis, but slightly weaker than observed in the 2014 analysis (0.91 to 0.97). This may be a result of the increase in funders, representing a wider range of strategic priorities and capacities.

## Distribution of Funding between Charity and Public Sector

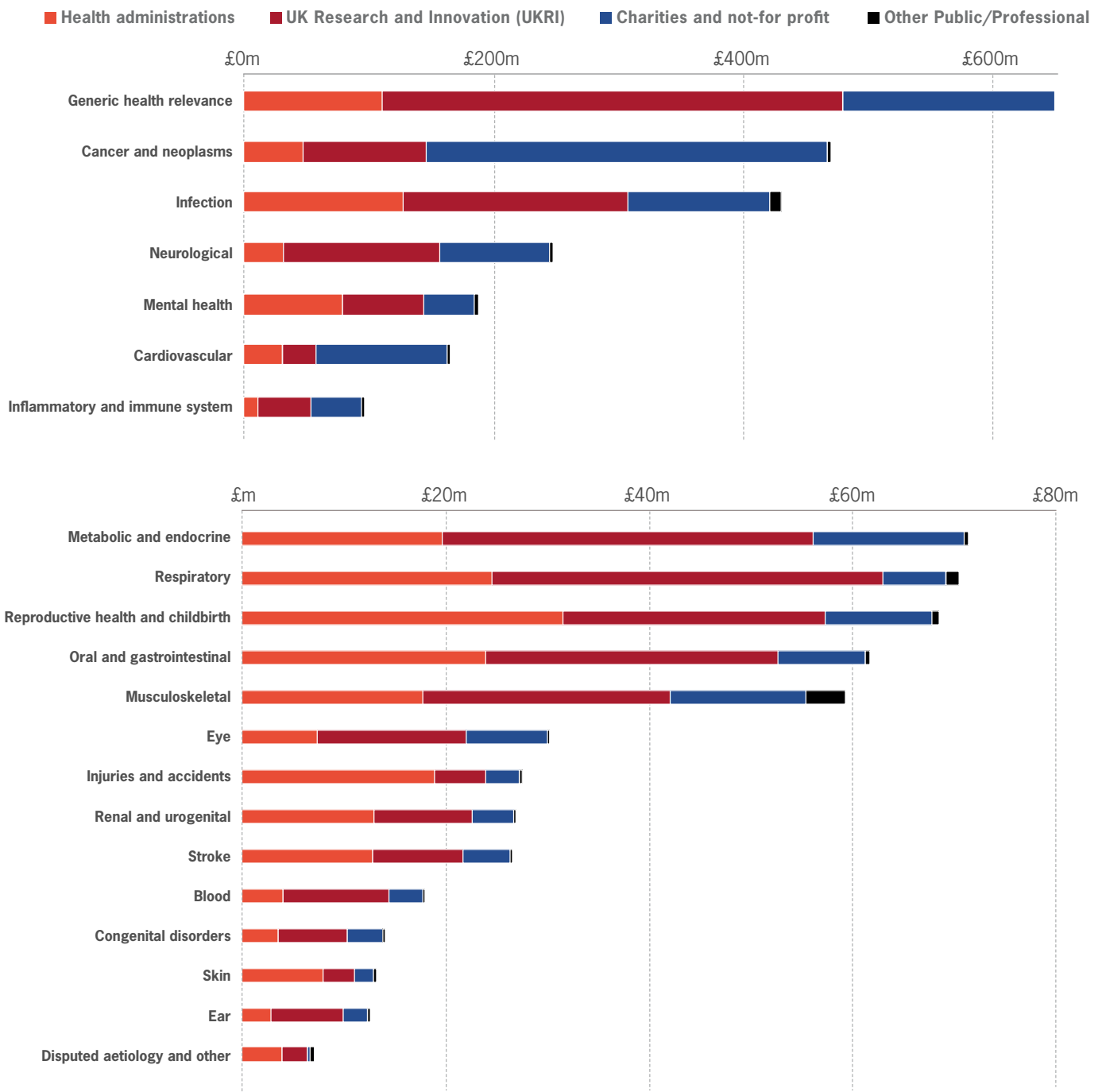


Figure 11 – Breakdown of HRCS Health Category spending by Charity or Public funders, split by >£90m (upper panel) and <£90m (lower panel) for 2022

# Progress and next steps



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# Progress and next steps

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Since 2012 we have had five main aims for the *UK Health Research Analysis* report series:

- **widening participation**
- **encouraging use of the analysis, including identification of research shortfalls**
- **expanding data sharing**
- **review of the HRCS**
- **progression of automated coding**

While much progress has been made, particularly in the expansion of participating organisations beyond core health and biomedical funders, there are still areas for which future developments can be directed.

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## Speed and data availability

A key drawback of a report that requires engagement with such a vast array of different organisations is the time taken to contact, collect, collate, analyse and publish the results. Since 2004, great progress has been made in the availability of data on research, yet very few funders routinely publish their funding portfolios, and fewer still publish their data in a way that can be easily extracted and analysed.

While our ability to trace onward use of our reports and public datasets are limited, we can evidence multiple instances of citations in academic reports and references in policy documents both nationally and internationally. There is a clear demand for a national, publicly available

resource that will allow for landscape reviews akin to our reports as well as more bespoke analyses of niche areas of health research.

What is lacking is the resource to be able to collate these data at scale and at a frequency that would allow for meaningful, repeatable analyses. Given the advances in data science since this series' inception, there are now a plethora of tools to allow scraping of public data from those funders that already publish their award data. Likewise, our system of submission-by-spreadsheet could easily be adapted and improved to allow easier and more frequent collation from organisations without public data.

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## Automated coding

The HRCS is an [open source system](#), but the HRAF have worked closely with Digital Science in the early stages of machine learning to automate HRCS coding (using our 2014 analysis data) culminating in a release of automated HRCS coding on *Dimensions* platform<sup>32</sup> in 2017 with subsequent refinement of the algorithm (using our 2018 analysis data) released in 2021. We have conducted a variety of assessments to compare traditional manual coding with auto-coding (see Appendix 10 of the 2018 analysis) which confirms its validity and it has proved a valuable tool for users of the *Dimensions* platform. Autocoding was also used extensively for this 2022 analysis, where 28% of awards were auto-coded.

However, there are limitations to this approach. Firstly, as a product from an independent private sector organisation, the HRCS auto-coding is proprietary and only available via subscription to the wider *Dimensions* platform and only for awards available via the platform. Secondly, for this analysis we required extensive manual curation of auto-coded datasets, often where award details were different from typical biomedical abstracts or had insufficient detail for a machine learning algorithm to assign codes to.

While these advances have aided the production of our report series, we encourage further developments in automation; both to improve current methodologies

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32 Hook et al. - "Dimensions: Building Context for Search and Evaluation" - *Frontiers in Research Metrics Analytics*, 23 August 2018. <https://doi.org/10.3389/frma.2018.00023>

for better coverage of non-biomedical sources and the development of new methodologies and processes that will encourage greater engagement from organisations with

limited resources and ultimately facilitate greater data sharing.

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### Next steps

The first analysis, on data from 2004/05, was published in 2006. Thus, following the typical four year interval for these reports, a future sixth iteration in 2026 would mark a 20<sup>th</sup> anniversary for the series and the HRCS as classification model. The progress to harmonise research funding analyses over this period has been significant, and our outreach beyond the core biomedical funders has provide a far wider understanding of the funding ecosystem.

However, there is significant room for improvement. If the HRCS – and by extension this series – are to continue it requires the funding community to find better ways

to share who funds what and where in health research. Without this, the ability to make informed strategic decisions on how the UK funds health research will continue at its current slow pace. The response to the COVID-19 pandemic has shown how more agile, informed decisions by health funders working together can make significant impacts. Our learning from that experience could be implemented here, in this report series, to the betterment of all.



# Appendices



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# Appendix 1

## Participating organisations and qualitative submissions

### Organisations participating in the *UK Health Research Analysis 2022*

Organisation	Submission	Type	Group	Page#
Action for A-T	Data	Charity	AMRC member	86
Action Medical Research	Data	Charity	AMRC member	86
African Research Excellence Fund	Text only	Charity	Independent	115
Against Breast Cancer	Data	Charity	AMRC member	86
Alopecia UK	Data	Charity	AMRC member	87
Alzheimer's Research UK	Data	Charity	AMRC member	87
Alzheimer's Society	Data	Charity	AMRC member	87
Anthony Nolan	Data	Charity	AMRC member	87
Antibiotic Research UK	Data	Charity	AMRC member	88
Arts and Humanities Research Council	Data	UKRI	UKRI	66
Association of Medical Research Charities	Text only	Charity	HRAF member (AMRC)	56
Asthma + Lung UK	Data	Charity	AMRC member	88
Ataxia UK	Data	Charity	AMRC member	88
Ataxia-Telangiectasia Society	Data	Charity	AMRC member	88
Autistica	Data	Charity	AMRC member	89
Barts Charity	Data	Charity	AMRC member	89
Big C	Data	Charity	AMRC member	89
Biotechnology and Biological Sciences Research Council	Data	UKRI	HRAF member & UKRI	56
BLISS	Data	Charity	AMRC member	89
Blood Cancer UK	Data	Charity	AMRC member	90
Bone Cancer Research Trust	Data	Charity	AMRC member	90
Borne	Data	Charity	AMRC member	90
Bowel Cancer UK	Data	Charity	AMRC member	90
BRACE	Data	Charity	AMRC member	90
Brain Research UK	Data	Charity	AMRC member	90
Brain Tumour Research	Data	Charity	AMRC member	91
Breast Cancer Now	Data	Charity	AMRC member	91
British Association for Counselling and Psychotherapy	Data	Charity	AMRC member	91
British Heart Foundation	Data	Charity	HRAF member & AMRC member	57
British Skin Foundation	Data	Charity	AMRC member	91
British Society for Research on Ageing	Data	Charity	AMRC member	92
Cancer Research UK	Data	Charity	HRAF member & AMRC member	58

## Appendix 1

Organisation	Submission	Type	Group	Page#
Cancer Research Wales	Data	Charity	AMRC member	92
Cerebra	Data	Charity	AMRC member	92
Chief Scientist Office, Scotland	Data	Health administration	HRAF member & devolved Government	58
Childhood Eye Cancer Trust	Data	Charity	AMRC member	92
Children with Cancer UK	Data	Charity	AMRC member	93
Children's Cancer and Leukaemia Group	Data	Charity	AMRC member	93
Chronic Disease Research Foundation	Data	Charity	AMRC member	93
Coeliac UK	Data	Charity	AMRC member	93
Crohn's & Colitis UK	Data	Charity	AMRC member	93
Cure Parkinson's	Data	Charity	AMRC member	94
Cystic Fibrosis Trust	Data	Charity	AMRC member	94
DEBRA	Data	Charity	AMRC member	94
Department for Culture, Media and Sport	Text only	Public	UK Government	72
Department for Education	Text only	Public	UK Government	73
Department for Environment, Food and Rural Affairs	Data	Public	UK Government	74
Department for Levelling Up, Housing and Communities (formerly Ministry of Housing, Communities & Local Government)	Text only	Public	UK Government	74
Department for Science, Innovation and Technology	Text only	Public	UK Government	75
Department for the Economy, Northern Ireland	Data	Public	Devolved Government	72
Department for Transport	Data	Public	UK Government	76
Department for Work and Pensions	Text only	Public	UK Government	77
Department of Health and Social Care (including NIHR)	Data	Health administration	UK Government	63
Diabetes Research & Wellness Foundation	Data	Charity	AMRC member	94
Diabetes UK	Data	Charity	AMRC member	94
Duchenne UK	Data	Charity	AMRC member	95
Dunhill Medical Trust	Data	Charity	AMRC member	95
Economic and Social Research Council	Data	UKRI	HRAF member & UKRI	59
Engineering and Physical Sciences Research Council	Data	UKRI	HRAF member & UKRI	59
Epilepsy Research UK	Data	Charity	AMRC member	95
Faculty of Intensive Care Medicine	Text only	Professional Body	Academy of Medical Royal Colleges	81
Faculty of Public Health	Text only	Professional Body	Academy of Medical Royal Colleges	82
Fight for Sight	Data	Charity	AMRC member	95
Friends of EORTC	Data	Charity	AMRC member	96
Friends of Rosie Children's Cancer Research Fund	Data	Charity	AMRC member	96
Glasgow Children's Hospital Charity	Data	Charity	AMRC member	96
Grace Kelly Childhood Cancer Trust	Data	Charity	AMRC member	97
Great Ormond Street Hospital Children's Charity	Data	Charity	AMRC member	97

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Organisation	Submission	Type	Group	Page#
Guts UK	Data	Charity	AMRC member	97
Health and Care Research Wales (Welsh Government)	Data	Health administration	HRAF member & devolved Government	60
Health and Social Care R&D Division, Public Health Agency, Northern Ireland	Data	Health administration	HRAF member & devolved Government	61
Health Education England (Department of Health and Social Care funded)	Data (from DHSC)	Public	UK Government	77
Healthcare Infection Society	Data	Charity	AMRC member	97
Heart Research UK	Data	Charity	AMRC member	98
Innovate UK	Data	UKRI	UKRI	68
Institute of Alcohol Studies	Data	Charity	AMRC member	98
James Tudor Foundation	Text only	Charity	Independent	118
JDRF	Data	Charity	AMRC member	98
Kidney Research UK	Data	Charity	AMRC member	98
Leeds Hospitals Charity	Data	Charity	AMRC member	99
Leukaemia & Lymphoma NI	Data	Charity	AMRC member	99
Leukaemia UK	Data	Charity	AMRC member	99
LifeArc	Data	Charity	Independent	118
Lister Institute of Preventive Medicine	Data	Charity	AMRC member	99
Macular Society	Data	Charity	AMRC member	100
Marie Curie	Data	Charity	AMRC member	100
Medical Research Council	Data	UKRI	HRAF member & UKRI	62
Medical Research Foundation	Data	Charity	AMRC member	101
Medical Research Scotland	Data	Charity	AMRC member	101
Medical Schools Council	Text only	Professional Body	Independent	82
Meningitis Now	Data	Charity	AMRC member	101
Meningitis Research Foundation	Data	Charity	AMRC member	101
Mesothelioma UK	Data	Charity	AMRC member	102
MND Association	Data	Charity	AMRC member	102
MND Scotland	Data	Charity	AMRC member	102
Moorfields Eye Charity	Data	Charity	AMRC member	102
MQ Mental Health Research	Data	Charity	AMRC member	103
MS Society	Data	Charity	AMRC member	103
Multiple System Atrophy Trust	Data	Charity	AMRC member	103
Muscular Dystrophy UK	Data	Charity	AMRC member	103
Myeloma UK	Data	Charity	AMRC member	103
Myrovlytis Trust	Data	Charity	AMRC member	104
National Centre for the Replacement, Refinement and Reduction of Animals in Research	Data	UKRI	UKRI	67

## Appendix 1

Organisation	Submission	Type	Group	Page#
National Institute for Health and Care Research (Department of Health and Social Care funded)	Data (as DHSC)	Health administration	HRAF Member & UK Government	63
Natural Environment Research Council	Data	UKRI	UKRI	66
Neuroblastoma UK	Data	Charity	AMRC member	104
Neurosciences Research Foundation	Data	Charity	AMRC member	104
North West Cancer Research	Data	Charity	AMRC member	104
Northern Ireland Chest, Heart and Stroke	Data	Charity	AMRC member	105
Nuffield Council of Bioethics	Text only	Professional Body	Independent	119
Nuffield Foundation	Data	Charity	Independent	119
Oracle Cancer Trust	Data	Charity	AMRC member	105
Orthopaedic Research UK	Data	Charity	AMRC member	105
Ovarian Cancer Action	Data	Charity	AMRC member	105
Pancreatic Cancer UK	Data	Charity	AMRC member	106
Parkinson's UK	Data	Charity	AMRC member	106
Pharmacy Research UK	Data	Charity	AMRC member	106
Prostate Cancer Research	Data	Charity	AMRC member	106
Prostate Cancer UK	Data	Charity	AMRC member	107
PSC Support	Data	Charity	AMRC member	107
Psoriasis Association	Data	Charity	AMRC member	108
Research England	Data	UKRI	UKRI	69
Retina UK	Data	Charity	AMRC member	108
Royal Academy of Engineering	Data	Learned Society	Independent	81
Royal College of Anaesthetists	Data	Charity	AMRC member	112
Royal College of General Practitioners	Text only	Professional Body	Academy of Medical Royal Colleges	82
Royal College of Obstetricians and Gynaecologists	Text only	Professional Body	Academy of Medical Royal Colleges	83
Royal College of Pathologists	Text only	Professional Body	Academy of Medical Royal Colleges	84
Royal College of Radiologists	Text only	Professional Body	Academy of Medical Royal Colleges	84
Royal Hospital for Neuro-disability	Data	Charity	AMRC member	108
Royal National Institute for Deaf People	Data	Charity	AMRC member	108
Royal Osteoporosis Society	Data	Charity	AMRC member	108
RS Macdonald Charitable Trust	Text only	Charity	Independent	120
Sarcoma UK	Data	Charity	AMRC member	108
Science and Technology Facilities Council	Data	UKRI	UKRI	69
Scleroderma & Raynaud's UK	Data	Charity	AMRC member	109
Scoliosis Association UK	Data	Charity	AMRC member	109

## Appendix 1

Organisation	Submission	Type	Group	Page#
Sight Research UK	Data	Charity	AMRC member	109
Sir Jules Thorn Charitable Trust	Data	Charity	AMRC member	109
Solving Kids' Cancer	Data	Charity	AMRC member	110
Spinal Research	Data	Charity	AMRC member	110
Sports England	Text only	Public	Other Public (DCMS Partner)	79
Stoke Mandeville Spinal Research	Data	Charity	AMRC member	110
Stroke Association	Data	Charity	AMRC member	110
Target Ovarian Cancer	Data	Charity	AMRC member	110
Tenovus Cancer Care	Data	Charity	AMRC member	111
The Academy of Medical Sciences	Data	Learned Society	Independent	80
The Brain Tumour Charity	Data	Charity	AMRC member	111
The British Academy	Data	Learned Society	Independent	80
The Council of Deans of Health	Text only	Professional Body	Independent	116
The Encephalitis Society	Data	Charity	AMRC member	111
The Francis Crick Institute	Data	Charity	Independent	116
The Health Foundation	Data	Charity	Independent	117
The Kennedy Trust for Rheumatology Research	Data	Charity	AMRC member	111
The Lewy Body Society	Data	Charity	AMRC member	111
The Little Princess Trust	Data	Charity	AMRC member	112
The Lullaby Trust	Data	Charity	AMRC member	112
The Migraine Trust	Data	Charity	AMRC member	112
The Scar Free Foundation	Data	Charity	AMRC member	113
The Urology Foundation	Data	Charity	AMRC member	113
Tommy's	Data	Charity	AMRC member	113
Tuberous Sclerosis Association	Data	Charity	AMRC member	113
UK Clinical Virology Network	Text only	Professional Body	Independent	85
UK Health Security Agency	Text only	Public	UK Government	78
UK Research and Innovation	Data	UKRI	UKRI	66
UK Space Agency	Data	Public	Other Public (DSIT Partner)	78
Versus Arthritis	Data	Charity	HRAF member & AMRC member	64
Wellbeing of Women	Data	Charity	AMRC member	113
Wellcome Trust	Data	Charity	HRAF member & AMRC member	65
Welsh Government Office for Science	Data	Public	Devolved Government	71
Wessex Medical Research	Data	Charity	AMRC member	114
World Cancer Research Fund	Data	Charity	AMRC member	114
Worldwide Cancer Research	Data	Charity	AMRC member	114
Yorkshire Cancer Research	Data	Charity	AMRC member	114

## Individual organisations; qualitative submissions and coding approaches

As both the number and diversity of organisations participating in this analysis has grown, we sought a short narrative from each participatory organisation. This provided an opportunity to acknowledge the role of each organisation, their broader contribution to the wider research environment, and their connection to the areas of health and biomedical disciplines. This has allowed a small number of organisations to participate even where their contribution to health research is un-quantifiable and no data on research awards or funding is available.

# Health Research Analysis Forum (HRAF)

## Association of Medical Research Charities



The Association of Medical Research Charities (AMRC) was established in 1987 and is the UK's national

membership organisation for health and medical research charities. AMRC supports its members to deliver high-quality research for patient and public benefit. It's dedicated to supporting medical research charities in saving and improving lives through research and innovation. It ensures that its member charities fund the best research by developing guides, providing training, and auditing their funding processes. One of AMRC's priorities is to demonstrate the value of the medical research charity sector to the public and policy-makers using data about research activity and impact as an evidence base. AMRC coordinated the 2023 submission to the *UK Health*

*Research Analysis 2022* on behalf of its members and a total of 124 charities submitted data on grants active in 2022 according to the criteria set by UKCRC. These 124 charities account for 83% of AMRC members (out of a total of 150 members in June 2023) and account for 99% (£1.542bn) of AMRC members' total UK research expenditure in 2022 (out of a total UK spend of £1.990bn for AMRC members). All grants were sent to be auto-coded through the Digital Science *Dimensions* platform with the exception of charities who provided manually coded grants (BHF, CRUK, Versus Arthritis and others). Any awards that failed to auto-code were checked manually and either manually coded by MRC or passed for inclusion in the indirect analysis. More information on individual charities can be found in the [AMRC member directory](#).

## Biotechnology and Biological Sciences Research Council (BBSRC)



The Biotechnology and Biological Sciences Research Council (BBSRC) is part of UK

Research and Innovation (UKRI), a non-departmental public body funded by a grant-in-aid from the UK government.

BBSRC invests in world-class bioscience research and training on behalf of the UK public. Our aim is to further scientific knowledge, to promote economic growth, wealth and job creation and to improve quality of life in the UK and beyond. We support research and training in universities and strategically funded institutes. BBSRC research, and the people we fund, are helping society to meet major challenges, including food security, green energy and healthier, longer lives. Our investments underpin important UK economic sectors, such as farming, food, industrial biotechnology and pharmaceuticals.

Medical research and development is outside of the remit of BBSRC and consequently the majority of BBSRC awards are found in the basic research categories 'Underpinning' and 'Aetiology'. BBSRC supports an integrated understanding of health. A deep, integrated understanding of the fundamental biological mechanisms of healthy systems across the life course is critical to improving human and animal health and wellbeing. By understanding and better exploiting the foundations for promoting and maintaining the resilience of physical and mental health, rather than overreliance on post-hoc interventions to alleviate poor health, there is the potential to deliver significant long-term socio-economic benefits through extending 'health span' for all. Alongside other UKRI Councils, including MRC, and charitable funders such as the Wellcome Trust, BBSRC has a key role in health research and innovation, supporting the generation of new knowledge and bio-based solutions and championing the



added value of integrated 'one health' approaches to areas such as infectious diseases and nutrition security. Further details are set out in BBSRC's Strategic Delivery Plan.

BBSRC invested £438 million in world-class bioscience in 2021-22 with around 21% of this portfolio related to an integrated understanding of health (defined by routine BBSRC classification procedures). Topics include: healthy

ageing; food, nutrition and health; one health approaches to zoonoses; and pharmaceuticals. Classification of awards under HRCS was via *Dimensions*, with manual coding provided by MRC for any records that did not produce an automated HRCS code.

Further information on all UKRI grants can be accessed in the public domain at Gateway to Research GtR ([ukri.org](http://ukri.org)).

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## British Heart Foundation (BHF)



The British Heart Foundation (BHF) is the single largest funder of cardiovascular research in the UK.

BHF funds research into the causes, prevention, diagnosis and treatment

of cardiovascular diseases, including research that aims to understand and prevent cardiovascular complications of predisposing conditions. In the 2021-22 financial year, the BHF's research committee expenditure was £72.3m, including supplements made to new and existing grants.

BHF supports investigator led research across the full spectrum of cardiovascular science, from discovery science and translational research through to clinical trials, population health sciences and, more recently, innovation in practice. BHF awards grants supporting projects and high value research programmes. Its personal awards span the entire career pathway, from PhD studentships to BHF professorships. The portfolio includes six Research Excellence Awards, which provide flexible funding to support multidisciplinary research and capacity building at centres across the UK; six Accelerator Awards, aimed at helping universities exploit the full potential of their cardiovascular research programmes (not included in the 2018 HRAF submission); three Centres of Regenerative Medicine; one BHF Data Science Centre; and one Big Beat Challenge award.

BHF works in partnership with other UK and international biomedical research funders, and is part of large collaborative funding partnerships, for example, in prevention research (the UK Prevention Research Partnership) and data science (Health Data Research UK). BHF additionally invests in research facilities, equipment and other indirect support underpinning cardiovascular research.

BHF manually codes all its awards using the Health Research Classification System and compared its manual coding to auto coding from *Dimensions* for the purpose of this report. All research awards are classified using only one Health Category: Cardiovascular. BHF also assigns only one Research Activity code to its awards.

BHF's submission to the *UK Health Research Analysis 2022* includes 1,129 awards that had active funding during 2022, with an overall annualised expenditure of £87.6m. Of this, £84.8m is included in the analysis of 1,026 direct awards. A further £2.9m was spent on 103 indirect awards supporting infrastructure, personal support that could not be coded using HRCS, and support for meetings, career development and Open Access fees.

## Cancer Research UK (CRUK)



Cancer Research UK (CRUK) is the world's largest cancer charity dedicated to saving lives through research. Our

vision is to bring forward the day when all cancers are cured, from the most common types to those that affect just a few people. CRUK funds a broad portfolio of investigator-led research, from individual projects and fellowships to large-scale team science programmes, multidisciplinary collaborations and international consortia. In addition, CRUK makes long-term investments in state-of-the-art facilities and resources to provide an outstanding research environment; facilitates networking and collaboration through international conferences and community meetings. CRUK partners with industry, charities, not-for-profits and government agencies in the UK and around the world. Supported research covers all types of cancer across all age groups, and ranges from understanding the biology of cancer to prevention, early diagnosis and treatment.

In the financial year 2021-22, CRUK's charitable research expenditure (annual research activity) totalled £388m. In this report, all active research is included except indirect or infrastructural funding. This is the same approach as that taken for compiling the 2004/05 and 2009/10 and 2014 portfolios. Core funding for the Francis Crick Institute (£38m in 2021-22) is not included in CRUK figures but instead is reported separately as the Francis Crick Institute alongside other co-funders' contributions. It should be noted that the figures in this report relate to projects active in the calendar year 2022 and therefore will not correspond exactly with financial year values reported in CRUK's reports and accounts which can be found [here](#).

**Coding approach:** CRUK's projects were coded by translation from the related Common Scientific Outline (CSO) or if there was no direct translation possible, projects were coded manually by research manager.

## Chief Scientist Office (CSO), Scotland



The aim of the CSO is to support and to promote excellent research in NHS Scotland, that is likely to

make a real difference to clinical practice and the health of the citizens of Scotland. The CSO therefore gears most funding towards the applied end of the spectrum.

The CSO have included all directly funded awards that could be attributed to a set of defined research objectives. This includes our research grants and academic fellowships which were all coded in house.

Scotland contributes to the overall budget for NIHR research programmes managed by the NIHR Coordinating Centre on behalf of the UK. NIHR have coded all their projects and those projects led from Scotland have been included in the CSO funding breakdown in **Appendix 4**.

The significant balance of CSO funding is allocated as infrastructure funding to support research in the NHS, including that funded by other partners in the analysis.

## Engineering and Physical Sciences Research Council (EPSRC)



The Engineering and Physical Science Research Council (EPSRC) is a

constituent council of UK Research & Innovation (UKRI) with the mission to promote and support high quality basic, strategic, and applied research and related postgraduate training in engineering and the physical sciences. Our vision is to ensure the UK is the place where the most creative researchers can deliver world-leading research with genuine economic and societal impact, supporting the Industrial Strategy ambition to make the UK the most innovative economy by 2030.

As part of the objectives in our 2022 delivery plan to deliver world class impact, EPSRC research plays a unique role in improving our health, from the development of new healthcare technologies and consumer health products, through to digital improvement of the healthcare system and engineering of healthy environments. We will work with partners in UKRI, the National Institute for Health and Care Research, charities, and the NHS to invest in research that transforms healthcare delivery, enables a more sustainable and resilient healthcare system integrating manufacturing

across scales, and supports healthier living in the UK and worldwide.

**Approach to coding:** EPSRC submitted all awards from its portfolio which were active during the reporting period, and which were determined upon original submission by portfolio staff to have relevance to health socioeconomic theme. These awards were then auto-coded using Digital Science *Dimensions* platform to the HRCS, with partial manual coding provided by MRC for any records that did not produce an automated HRCS code.

Due to the non-biomedical nature of EPSRC's research remit some awards will be underpinning or have impact in multiple areas of health research (and other sectors beyond). Other awards will have direct relevance to health research, but it should be noted EPSRC does not normally take a disease specific focus to its funding activities in healthcare, instead encouraging researchers to solve specific health challenges they have identified in partnership with the appropriate users of that research.

Further information on all UKRI grants can be accessed in the public domain at [Gateway to Research](#).

## Economic and Social Research Council (ESRC)



The Economic and Social Research Council (ESRC) is part of UK Research and Innovation (UKRI) and is the

UK's largest organisation for funding research on economic and social issues. We support independent, high-quality research which has an impact on business, the public sector and civil society. ESRC's total budget for 2022-23 was around £196 million.

As one of UKRI's councils, ESRC supports both fundamental discovery research - maintaining the health of the [18 social science disciplines](#) - and funds focused research and innovation priority areas - running schemes, competitions and initiatives which advance the frontiers of social science, often through interdisciplinary UKRI collaborations and through working with government,

industry, the third sector and internationally. ESRC also maintains investments in data infrastructure (e.g. data from surveys and administrative records) and continues to invest in building research talent, methods and leadership. To make robust funding decisions, we secure independent peer reviews and convene expert panels to assess proposals based on quality, timeliness, potential impact, value for money and fit to the specification of the particular competition.

A proportion of ESRC's funding, through both fundamental discovery research and focused research and innovation initiatives, supports health-related research. The [ESRC Delivery Plan](#) published in 2022 outlines our current priority areas, which include 'understanding behaviour', an area underpinning some key health research domains, and also 'health and social care.' In health and social

care, we have significant investments including a £16m initiative co-funded with NIHR on dementia including care, prevention and quality of life. ESRC is also lead delivery partner for the [Industrial Strategy Challenge Fund Healthy Ageing Challenge](#). Our major research centres and grants, rapid response investments and our investment in data infrastructure was a key part of the government's research response to COVID-19. ESRC are also part of consortia tackling health challenges at scale including the £50 million [UK Prevention Research Partnership](#) which supports novel research into the primary prevention of non-communicable diseases and the £35m [Adolescence, Mental Health and Developing Mind initiative](#).

To collate award information for this analysis, we created a keyword search tool to capture health-related awards that incurred spend in the 2022 calendar year. A list of the keywords used is available upon request. Duplicates were

removed from the list of awards returned by the search tool. The remaining grants were then manually sorted by office staff into two categories: health relevant (definitely or probably) or not health relevant. The grants that had been identified as health relevant were manually coded by an experienced external HRCS coder. A broad interpretation of health relevance was used throughout the process which reflects the contribution that the social sciences make to the health research landscape. The analysis picked up all research awards, including large scale data resources. Where a grant was deemed to be health relevant, the whole total of that grant was included in calculations of ESRC spend on health (in line with how grants from other funders were dealt with). Studentships were not included.

Further information on these grants can be accessed in the public domain at [Gateway to Research](#).

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## Health and Care Research Wales (Welsh Government)



Llywodraeth Cymru  
Welsh Government



Health and Care Research Wales is Wales' national organisation for health and social care research, funded by the Welsh Government and led and managed by the Research and Development Division (RDD). Health and Care Research Wales brings together a wide range of partners across the NHS in Wales, local authorities, universities, research institutions,

the life sciences, pharmaceuticals, and medical technology industries, third sector/voluntary organisations, community groups and many others. Amongst other activities and responsibilities, it runs a range of responsive funding schemes and personal awards, provides an infrastructure to support and increase capacity and capability in health and social care R&D, and manages the NHS Wales R&D research delivery funding. More information on Health and Care Research Wales can be found here (<https://healthandcareresearchwales.org/about>)

HRCS coded expenditure included in this report covers all active research scheme grants awarded through open, peer reviewed competition. RDD funded 68 direct awards

in 2022 through Health and Care Research Wales run schemes, at a total annualised\* cost of approximately £3.92m (£16.49m total lifetime commitment). RDD contributes to the overall budget for agreed NIHR research programmes managed by the NIHR Coordinating Centre, thus providing access to these schemes for Wales-based researchers. In 2022, RDD contributed £5.75m to provide Wales-based researchers with access to the Efficacy and Mechanism Evaluation, Health Technology Assessment, Health Service and Delivery Research and Public Health Research programmes. NIHR has coded all these projects, and those NIHR Coordinating Centre projects led from Wales have been included in our final RDD spend profile, see **Appendix 4** for details.

Infrastructure and other supportive funding of over £29.44m has been classified as indirect spend and includes: national clinical trials units; national research centres and units; national research support groups; contributions to UK research initiatives. Additional 'indirect' support for health research is provided through NHS R&D funding streams. Total R&D spend was approximately £39.3m, which includes 'other' funding not covered by direct awards or infrastructure funding. For more information on Health and Care Research Wales

infrastructure and support, please see here. (<https://healthandcareresearchwales.org/about/research-community>)

**Notes:** Coding of direct awards was undertaken manually by officials in RDD, while figures for indirect or other awards was generated from RDD financial data. Due to

the methodology for calculating spend in this report, the total of £39.3m for 2022 differs from our own best figure for calendar year of £43.4m (based on budgets across financial years; £45.275m for financial year 2021/22 and £47.545m for financial year 2022/23).

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## Health and Social Care Division of the Public Health Authority, Northern Ireland (HSCNI)



The Health and Social Care Research and Development (HSC R&D) Division is part of the Public Health Agency,

Northern Ireland. Established in 2009, it is responsible for the administration and coordination of the HSC R&D budget on behalf of Department of Health, Northern Ireland (DoH NI). Its' work is based on the principle that the best health and social care must be underpinned by knowledge, based on well conducted research, which can then be applied in the delivery of care.

The HSC R&D Division supports researchers based in Northern Ireland as well as those in Health and Social Care Trusts or other bodies who use the outputs from research findings. While the effectiveness of research performance and application depends ultimately on the skill and ability of individual researchers and users of research, the HSC R&D Division ensures that researchers can work within an environment that supports, encourages and facilitates them.

For example, the HSC R&D Division:

- funds essential infrastructure for research such as information databanks, tissue banks, clinical research facilities, clinical trials units and research networks
- builds research capacity in Northern Ireland through research training opportunities
- enables research governance processes to be as efficient as possible
- creates opportunities for researchers to compete for research funding on a wider UK or international basis

- supports innovation as a means of transferring HSC R&D findings into practice
- ensures personal and public involvement (PPI) in HSC R&D

HSC R&D Division has made every effort to maximise reporting on the use of all funds. It is important to note that the HSC R&D Division budget is small relative to other UK Health Departments. Developments in the UK R&D landscape over the time period covered by this report have influenced funding allocation decisions. The distribution and proportion of funding between direct and indirect awards with indirect R&D support has proportionately increased over the past number of years in order that R&D in Northern Ireland can strive for parity with other regions of the UK which receive larger per capita R&D budgets. The indirect awards included under infrastructure encompass the clinical research networks and centres providing specialist research services and support; some examples of the latter include The NI Clinical Research Network (NICRN), The NI Clinical Trials Unit (NICTU) and The NI Biobank. Consequently, this has increased the emphasis for Northern Ireland researchers to seek direct R&D funding from national funding sources. HSC R&D Division contributed £3.411m in 2022 to the NIHR in order to gain access to specific NIHR research programmes including HTA, PHR, HSDR and EME. This contribution allows researchers in Northern Ireland to apply to these funding streams.

In 2022 there were a total of 122 active awards in our portfolio across the various categories in the report. Direct awards were coded using the HRCS by a freelance coder.

## Medical Research Council (MRC)



The Medical Research Council (MRC) is part of UK Research and Innovation (UKRI) and invest in health

and medical research on behalf of the UK tax payer. The heart of our mission is to improve human health through world-class medical research. To achieve this, we support research across the biomedical spectrum, from fundamental lab-based science to clinical trials, and in all major disease areas. We do this by providing research grants and career awards to scientists.

Our funding opportunities are either:

- **researcher-led:** Regular, continuous funding opportunities. Proposals are reviewed at board and panel meetings. Funding is available for any area of science relevant to the MRC, to eligible groups and individuals, offering funding on a range of scales, across career stages, from fundamental to translational research.
- **MRC strategic:** Funding opportunities in a specific research area defined by the MRC, usually for a one-off call or a time-limited period. Proposals may have special application and review mechanisms.
- **longer term investments:** We also support research through our institutes, units and centres. Some are highly focused on specific science areas, others have a very broad research remit. The intention is to address important scientific opportunities and health needs when stand-alone grant support alone is insufficient.

The MRC routinely codes all awards using the HRCS. This work is carried out by staff in the research programmes group at MRC Head office. Periodic peer review between the internal coders is carried out to ensure a consistent approach from the coding community.

All awards which had active MRC funding during 2022 were selected for this analysis. This included standard grants, studentships, fellowships and programme grants made to

MRC University Units and Institutes. For co-funded awards, the award amount provided was the MRC contribution. For awards where funding was provided by MRC for only part of the year a pro-rata annual award amount was supplied.

MRC programmes have been presented as the figures attributed to each programme during the 2021/22 financial year. These types of awards include both direct research funding and the provision for staff, administrative and infrastructure/equipment, meaning they meet criteria for both direct and indirect analyses. To ensure consistency with previous reports, these awards are fully coded and included in the main direct analysis.

Funding for MRC studentships is primarily via Doctoral Training Partnerships (DTPs) awarded to research organisations (ROs), from which the ROs select outstanding candidates for projects which align to both their and MRC's remit and strategic priority areas. Details of the individual studentships supported are inputted by the ROs into the Je-S administration portal where MRC can then extract the data and complete HRCS coding. In 2021/22 there were 1,048 students active with an estimated spend of £20.3m - largely based on MRC's minimum stipend values adjusted accordingly for inside/outside London weighting - fees and duration within 2022. Any studentships without sufficient detail are included as part of MRC's indirect submission. Studentships awarded before January 2018 have different data protection policies in their terms and conditions and we have therefore anonymised award information in the public dataset for any still active in 2022.

Further information on all UKRI grants can be accessed in the public domain at [Gateway to Research](#).

## Department of Health and Social Care (DHSC)



The Department of Health and Social Care primarily funds health

and social care research in England through the National Institute for Health and Care Research (NIHR). The NIHR works closely with the devolved Governments in Scotland, Wales and Northern Ireland which co-fund a number of its programmes.

In addition to its national role, the NIHR supports applied health research for the direct and primary benefit of people in low- and middle-income countries, using UK aid from the UK government.

HRCS direct spend includes:

- all NIHR research programmes
- all NIHR fellowships EXCEPT those where we do not have project details and all specialty training posts that are awarded through the Integrated Academic Training Programme

### Indirect spend includes:

For NIHR infrastructure this includes Clinical Research Network costs and other types of research infrastructure and core support at the Applied Research Collaborations, Biomedical Research Centres, Blood and Transplant Research Units, Clinical Research Facilities, Clinical Trial Units, Experimental Cancer Medicine Centres, Health Protection Research Units, HEE/NIHR Integrated Clinical Academic Programme, Medtech and In vitro diagnostics Co-operatives, NIHR Integrated Academic Training, Patient Safety Translational Research Centres, Research Design Service, Senior Investigator Awards, and Evidence Synthesis Programme (Infrastructure).

For DHSC funding, this includes infrastructure spend that supports Clinical Academic Research Partnerships (CARP) fellowships, Embryonic Stem Cell Bank, NIHR contribution to the UK Clinical Research Collaboration (UKCRC) Tissue Directory, NIHR contribution to UKCRC running costs, NIHR/Medical Research Council (MRC) Deep and Frequent Phenotyping (embedded in Dementias Platform UK), Motor

- All other NIHR direct research spend (i.e. non-core support costs) at the Applied Research Collaborations, Biomedical Research Centres, Blood and Transplant Research Units, Health Protection Research Units, HEE/NIHR Integrated Clinical Academic Programme, Medtech and In vitro diagnostics Co-operatives, Policy Research Units, School for Primary Care Research, School for Public Health Research, School for Social Care Research and Patient Safety Translational Research Centres, and Surgical Reconstruction Microbiology Research Centre.

Neurone Disease Collaborative Partnership Call, National Preventative Research Initiative (NPRI)/UK Prevention Research Partnership (UKPRP) from 2017/18, National Cancer Research Institute (NCRI), UK Biobank, Academy of Medical Science (AMS) Grant, UK Research and Innovation (UKRI) Strategic Priorities Fund (SPF) Clean Air Consortia Call, Economic and Social Research Council (ESRC)/NIHR Dementia Initiative, NIHR/MRC Methodology Research Programme (MRP), MRC/NIHR UK project decodeME, MRC/NIHR Multimorbidity Priming Scheme, Tessa Jowell Brain Cancer Mission, NIHR/MRC Strategic Priorities Fund (SPF) Multimorbidities, Global Alliance for Genomics and Health (GA4GH), COVID Genome Consortia (COG) - Sequencing the virus, Recovery Plus (replaces ACCORD) Recovery+ including Coronavirus Treatment Acceleration Program (CTAP) contribution, UKRI open call AGILE/REACT-Genomics England study platform, and NIHR contribution to HDRUK (Health Data Research UK - MRC company).

### Data coding and verification

NIHR research and training programmes are coordinated and managed by the NIHR Coordinating Centre.

Fellowships are double-coded by two trained coders. Coding was done on project abstracts or descriptions. Programme awards were double-coded by two trained coders using project titles and abstracts, with certain programmes using *Dimensions* autocoding for reference.

NIHR Infrastructure (managed by the NIHR Coordinating Centre) was coded by a trained internal coder. The coding

is assigned to research themes within each award, however, HRCS is not designed for broad themes of research so Resources and infrastructure RACs were used. A proportion of this Infrastructure spend is considered as direct spend and is included in the main analysis.

For **Devolved Government Funding (NIHR Contributions)** see **Appendix 4** for more details.

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## Versus Arthritis



Versus Arthritis is the largest dedicated funder of arthritis research in the UK. We invest in research that has the power to

deliver new treatments and transform the lives of over 10 million people with arthritis in the UK. Our research portfolio includes almost 200 research awards, spanning early-stage discovery science, clinical trials, health studies and translational work to fast-track new knowledge and interventions into practice.

Through our funding, we support world-class arthritis researchers, research teams and centres of excellence, creating a galvanized community working to deliver more effective treatments and better services for people with arthritis. To this end, we work extensively in partnership

and across multi-disciplinary fields. Alongside people living with arthritis, volunteers, healthcare professionals, policymakers and researchers, we aim to raise awareness of the prevalence and wide-ranging impact of arthritis, and to encourage others to join with us in our research ambitions.

The awards excluded from this report are endowed chair awards (providing a lump sum fund to boost financial investments in recipient universities, including academic and technical salaries, infrastructure and research facilities supporting arthritis research). Versus Arthritis has been manually coding research awards since 2015, including the data submitted for this report. Each award was coded by coders who have received training provided by the MRC.



## Wellcome Trust



Wellcome is a global charitable foundation established in 1936. Through our work we support science to solve the urgent health issues facing everyone. We fund curiosity-driven

research, and we're taking on three of the biggest health challenges facing humanity – climate change, infectious disease and mental health.

With a £37.8 billion investment portfolio and we're spending £16bn over the next ten years on projects across a range of academic disciplines – including physical and social sciences, and the humanities – to ensure researchers have what they need to be ambitious, creative, and make new discoveries.

As a global charitable foundation, we want researchers worldwide to engage with us, partner with us, and apply for funding for pioneering projects that will help to solve the most pressing health challenges facing humanity.

We also work with policy makers, run advocacy campaigns, and form partnerships with other organisations to ensure everyone, everywhere benefits from advances in health science.

### Our data:

Wellcome does not currently classify grants according to the UKCRC Health Research Classification System.

**Data pre-2018:** In the 2004/05 - 2014 reports in this series Wellcome provided bespoke manually coded data.

**Data 2018 onwards:** For the 2018 and 2022 analyses, all Wellcome grants were classified under HRCS using automated coding via the *Dimensions* platform, as part of an agreement between Digital Science and the Association of Medical Research Charities (AMRC). Partial manual coding was provided by MRC for records that did not produce an automated HRCS code.

Please note that that data provided in this report represents Wellcome's grant funding activity and does not represent our total charitable spend.

## UK Research and Innovation (UKRI)

UKRI invests £8 billion of taxpayers' money each year into research and innovation and the people who make it happen. We work across a huge range of fields – from biodiversity conservation to quantum computing, and from space telescopes to innovative health care. We give everyone the opportunity to contribute and to benefit, bringing together people and organisations nationally and globally to create, develop and deploy new ideas and technologies.

Four of the nine UKRI partners are members of the HRAF. The remaining UKRI partners all contributed data for this analysis. Awards made via UKRI Strategic Programmes (e.g. Industrial Strategy Challenge Fund (ISCF), Strategic Priorities Fund (SPF), etc.) are managed by individual partners based on their scientific remit. Therefore health-relevant funding from these programmes are included within UKRI partner submissions. The exception to this is the Strength in Places Fund (SiPF), which is centrally managed within UKRI, providing two health-relevant awards totalling £11.5m for this analysis.

### Arts and Humanities Research Council (AHRC)



Arts and  
Humanities  
Research Council

Arts and humanities lie at the heart of research and innovation in the UK. The

work that we fund underpins health, happiness, well-being and thriving places; it creates the space for research and innovation to make a difference to society and the economy, and it is ever more powerful when combined with expertise from other disciplines, sectors and contexts. AHRC's investment in health research has been rising since 2012 and now totals over £59m of funding. Community engagement, co-creation and the voices of lived experience are embedded in our work as arts and humanities research unlocks improvements in our health and social care systems; drawing on ethics and law to combat inequalities, design to bring new projects to market, language to

communicate health needs, and history to learn from the past.

The data presented in this analysis were based on keyword searches on our database of funds awarded across the AHRC's portfolio (comprising research grants, fellowships and studentships) that were active during the calendar year 2022. During this year, there were 122 active grants that fall into the health remit, represents a total funding amount of £9.2m in this analysis. The HRCS coding was initially applied using *Dimensions*, but with manual quality control. Manual coding was provided by MRC for all records that did not produce an automated HRCS code.

Further information on all UKRI grants can be accessed in the public domain at [Gateway to Research](#).

### Natural Environment Research Council (NERC)



Natural  
Environment  
Research Council

The Natural Environment Research Council (NERC) is part of UK Research

and Innovation (UKRI) and advances the frontier of environmental science by commissioning new research, infrastructure and training that delivers valuable scientific breakthroughs. We do this because understanding our changing planet is vital for our wellbeing and economic prosperity.

This is the third submission by the NERC and is based upon active grants during 2022 associated with NERC's Environment & Health science topic classification and HRCS autocoding on *Dimensions*, with quality assurance from NERC analysts and manual coding provided by MRC for any records that did not produce an automated HRCS code. These grants are worth £12.9m in terms of annualised spend, calculated assuming a flat spending profile across the life of the grants.

However, because much of the metadata was only available in NERC's grants system, the health research embedded within NERC's national capability funding was not covered – national capability being a large component of the funding for NERC's six established centres: The British Antarctic Survey (BAS), the British Geological Survey (BGS), the Centre for Ecology and Hydrology (CEH), the

National Centre for Atmospheric Sciences (NCAS), the National Oceanography Centre (NOC) and the National Centre for Earth Observation (NCEO).

Further information on all UKRI grants can be accessed in the public domain at Gateway to Research.

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## National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs)



National Centre  
for the Replacement  
Refinement & Reduction  
of Animals in Research

The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) is a scientific organisation working nationally and internationally with the research community to replace, refine and reduce the use of animals in research and testing (the 3Rs). We collaborate with scientists and organisations across the life sciences sector including universities, the pharmaceutical, chemical and consumer products industries, other research funders, and regulatory authorities. We support the commitment of the scientific community to the 3Rs by funding research and early career development, supporting open innovation and the commercialisation of 3Rs technologies, and stimulating changes in policy, regulations and practice.

Our funding schemes support the development of new models, tools and technologies to advance 3Rs research. Awards may also focus on demonstrating new models are fit-for-purpose, providing comparison against existing technologies and applying the tools to further scientific understanding. These may be in any area of medical, biological or veterinary sciences and can span multiple disciplines such as the life sciences, engineering and mathematics. We have a number of response mode funding schemes to support our activities. Awards made

under our CRACK IT scheme, which aims to accelerate the availability and commercialisation of 3Rs technologies, have not been submitted as part of this exercise. All our grants undergo peer-review (external, panel or both) prior to an award being made and reviewers must evaluate awards on both their scientific excellence as well as their potential to achieve a measurable 3Rs impact.

We have shown 3Rs-focused research leads to impacts that can benefit human health. A significant proportion of our portfolio aims to apply the 3Rs to models of disease and the safety assessment of pharmaceuticals and chemicals. In 2022, we made 46 awards across our schemes, excluding CRACK IT, totalling a commitment of £9.2 million (including £180k from the British Heart Foundation, £75k from Cancer Research UK and £4.7 million from BBSRC.)

This is the third time that the NC3Rs has taken part in the HRCS data analysis exercise. All data for the coding was taken from the grants management system, Siebel, and grant proposal forms submitted via the joint electronic submission system, Je-S. Coding was completed by the MRC on behalf of the NC3Rs.

## Innovate UK



Innovate UK is the UK's innovation agency. We help UK businesses to grow

through innovation. The government's vision is for the UK to be a global hub for innovation by 2035. Our mission in achieving that is to help companies to grow through their development and commercialisation of new products, processes and services, supported by an outstanding innovation ecosystem that is agile, inclusive and easy to navigate.

We help companies, through three strands of activity:

- inspire: to make the opportunity visible and compelling
- involve: to bring relevant organisations and people together
- invest: to convene the resources needed, including our own

We do this in our five strategic theme areas and through the six strong foundations that underpin all our activities. We help companies access the expertise and equipment they need, build the partnerships that will help them go faster, and fund the innovation work through grants or loans. We support the best ideas from business, as determined through free and fair competition.

Our support is available to businesses across all economic sectors, value chains and UK regions. Since 2007, we have invested more than £10bn in core grant funding to help businesses across the country to innovate, with match funding from industry. We have helped more than 21,000 organisations through more than 26,000 projects create more than 150,000 jobs and added more than £40bn of value to the UK economy. For more information, visit our [Government webpages](#).

Further information on all UKRI grants can be accessed in the public domain at Gateway to Research.

### Data notes:

Innovate UK provided a portfolio of projects relating to all aspects of Health and Care, including areas of strategic importance such as Stratified Medicine, Regenerative Medicine and Independent Living. This portfolio is predominantly focused on projects awarded through specific Health and Care interventions but also includes applications related to health submitted to Innovate UK's open competitions.

It does not include:

- basic bioscience
- Bioscience or Life Science projects where the work is primarily on agriculture, such as livestock or crop health

All grants included in the analysis were active in 2022. Every grant in the analysis was awarded following expert review. The number of health-related projects submitted to the analysis was 953 with a total commitment from Innovate UK of £1.02bn. Automated HRCS coding came from *Dimensions*, with manual coding provided by MRC for any records over £50k that did not produce an automated HRCS code.

## Research England



Research England is part of UK Research and Innovation (UKRI). It funds and engages with

English higher education providers to create and sustain the conditions for a healthy and dynamic research and knowledge exchange system in the higher education sector. This is achieved through providing performance-based, higher education provider-focused funding to:

- deliver excellent research and high-performance knowledge exchange
- unlock potential
- generate economic and social impact
- meet local and regional priorities and tackle national and global challenges

For a detailed explanation of Research England's funding, what it supports and how it is allocated, see Research England: how we fund higher education providers (<https://www.ukri.org/publications/research-england-how-we-fund-higher-education-providers/>).

The projects submitted to this analysis relate to the health sector and were in receipt of funding during the calendar year 2022. They have been supported by a range of Research England's funding streams: the UK Research Partnership Investment Fund (UKRPIF), Student engagement in knowledge exchange (SEKE), the Research England Development (RED) Fund, and the Connecting Capability Fund (CCF). Data on the proportion of our budget related to QR funding is included separately in **Appendix 4**.

## Science and Technology Facilities Council (STFC)



Formed in 2007, STFC is a world-leading multi-disciplinary science

organisation with a clear mission: to deliver economic, societal, scientific, and international benefits to the UK and to the world. Established in 2018, UK Research and Innovation (UKRI) works in partnership with universities, research organisations, businesses, charities, and government to create the best possible environment for research and innovation to flourish. UKRI brings together the seven disciplinary research councils, including STFC, as well as Innovate UK and Research England.

STFC's strength comes from our distinct but interrelated functions:

- **universities** - we support university-based research, innovation and skills development in astronomy, particle physics, nuclear physics, and space science
- **scientific facilities** - we provide access to world-leading, large-scale facilities across a range of physical and life sciences, enabling research, innovation, and skills training in these areas

- **national campuses** - we work with partners to build National Science and Innovation Campuses based around our National Laboratories to promote academic and industrial collaboration and translation of our research to market through direct interaction with industry
- **inspiring and involving** - we help ensure a future pipeline of skilled and enthusiastic young people by using the excitement of our sciences to encourage wider take-up of STEM subjects in school and future life (science, technology, engineering, and mathematics)

Many of the areas mentioned above are involved in health-related research, both directly and indirectly. As an example, we have supported researchers in universities with projects such as establishing challenge networks in the areas of advanced radiotherapy and cancer diagnosis. These networks aim to create a multidisciplinary community to address challenges in these areas, focusing on developing technologies and techniques that aim to improve patient quality of life, increase the chance of patient survival, develop a research pipeline, and contribute to a coordinated national plan and roadmap for these challenges. In 2022, we awarded over £6 million in research grants that were health related. Many of the research projects that we fund have crossover benefits for the health sector that may not have been the initial objective of the research.

Our national facilities have delivered a large amount of beamtime for researchers from across the world

conducting health related research. The health research conducted at our facilities is varied, it includes (but is not limited to) developing new methods of treatment, understanding molecular structures and the behaviour of a large variety of molecules, and developing new drugs and methods for targeted drug delivery. Facility usage data submitted for this report has been provided by STFC's ISIS and Diamond Light Source facilities. In 2022 our ISIS facility provided over £7.4 million worth of beamtime to health-related research and our Diamond facility provided £29 million worth.

Selection of health-relevant awards was conducted in house by STFC. HRCS coding was initially applied using *Dimensions*, but with manual quality control. Partial manual coding was provided by MRC for any records that did not produce an automated HRCS code. Further information on all UKRI grants can be accessed in the public domain at [Gateway to Research](#).

# UK Government Departments and Non-departmental Public Bodies

## Welsh Government Office for Science



Llywodraeth Cymru  
Welsh Government

The Welsh Government Office for Science (WGOS) is led by Professor Peter Halligan, Chief Scientific

Adviser for Wales (CSAW). WGOS supports the CSAW

To date, Sêr Cymru programme elements have successfully supported 3 National Research Networks, 12 Research Chairs, 11 Rising stars, 115 research fellowships (including those supporting researchers returning to academia following a career break) and more than 340 PhD students and postdoctoral researchers. This award has brought the total investment to date for this programme to approximately £100m. With more than £30m of this from the European Commission through Horizon 2020 and Structural Funds, Wales is the only country to have used both European Funding sources in a synergistic manner to support research.


Applications to the Sêr Cymru programme are submitted from Welsh universities and are assessed by international peer review and a specially established Independent Evaluation Panel. Evaluation criteria include measures such as scientific excellence, quality of the research environment and track record of the applicant. Some parts of the scheme require applications to be submitted to set deadlines, whereas others are received and assessed on an ad hoc basis. We differentiate between Sêr Cymru I and II as they are different funding models; I is purely Welsh Government funded but II is a partnership model involving Welsh Government, Welsh HEIs, European Commission, Structural Funds.

The Sêr Cymru programme welcomes applications in its 'Smart Specialisation' areas of: Low Carbon, Energy and the Environment; Life Sciences and Health; Advanced Materials and Manufacturing; and ICT and the digital economy. Sêr Cymru I has a total spend of £41million, £11million of which is relevant to Life Sciences and Health. Ser Cymru has a total spend of £55million, 24% of which is for projects with a sole focus on Life Sciences and Health.

to ensure that the Welsh government has access to the best scientific evidence and strategic long-term thinking to inform policies and decisions. In keeping with the responsibilities of the CSAW, the main functions of WGOS can be summarised under five headings:

- Science Advice for Policy
- Promotion & Communications
- Programme Management & Delivery
- Science Capability & Skills
- Evidence Synthesis & Analytics

Welsh Government has multiple mechanisms for conducting and funding research. The proportion of the portfolio included in this exercise however, is funded completely by the Sêr Cymru (Welsh Stars) programme that is managed by WGOS. The aim of Sêr Cymru is to create a globally-competitive science and technology research base in Wales. WGOS is directly involved in the design, delivery and monitoring of the Sêr Cymru programmes. A second programme element, using considerable EU structural and Horizon 2020 funding followed in 2015.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 663830

## Department for Culture, Media and Sport



Department  
for Culture  
Media & Sport

The Department for Culture, Media and Sport (DCMS) has a broad policy portfolio, supporting some of the most exciting sectors in the UK.

Policy-making at DCMS has the ability to shape the present and future of the UK's cultural, media and sporting sectors as well as delivering policy to better support civil society and youth. We exist to drive growth and enrich lives. To do this, the department must draw upon the highest-quality research, evidence and technical knowledge to support policy and decision making. Creating a strong evidence base that shows how much DCMS sectors are worth socially and economically is a top priority for the department.

The Department for Culture, Media and Sport will focus on supporting culture, arts, media, sport, tourism, and civil society across every part of England — recognising the UK's world-leading position in these areas and the importance of these sectors in contributing so much to our economy, way of life and our reputation around the world. The department will champion sport for all at every level, support our world-leading cultural and creative industries and enhance the cohesiveness of our communities. As well as our own research interests these are supported by DCMS by 42 agencies and public bodies.

Supporting DCMS's research priorities DCMS published its Areas of Research Interest which set out DCMS's key

policy research questions. Alongside this overarching publication DCMS has published a specific Video Games Research Framework and DCMS's Culture and Heritage Capital Framework will be looking at how to value health and wellbeing.

In addition, DCMS has commissioned research directly on the health impacts of our sectors:

- the role of arts in improving health and wellbeing (2020) – a commissioned report that reviews the evidence base around the role of arts in improving health and wellbeing and who Social Prescribing can impact on social outcomes, youth development and prevention of mental and physical illness
- factors associated with loneliness in adults in England during the pandemic (2022) - including predictors of loneliness, the variations in risk for people protected characteristics and predictors of resilience
- mental health and loneliness: the relationship across life stages (2022) - which explored how those diagnosed with mental health problems experience loneliness, stigma, and its variation by life stage

For more on research and statistics produced by the Department, try our search facility here.

## Department for the Economy, Northern Ireland



The Department for the Economy (DfE) was established in May 2016. Its responsibilities include:

- wider economic policy, including specific areas like Energy, Tourism and Telecoms
- the operation of a range of employment and skills programmes
- oversight and funding of the further and higher education sectors

- various aspects of employment law; and
- the management and operation of various EU funding programmes

The Department for the Economy (DfE) currently funds one international programme; the US-Ireland R&D Partnership, which promote early stage research collaboration between universities.

The **US-Ireland R&D Partnership** promotes research collaboration between universities in Northern Ireland, the Republic of Ireland and the United States of America (USA).



This programme: helps link scientists and engineers in partnerships across academia to address crucial research questions; fosters new and existing industrial research activity that could make an important contribution to the respective economies; and expands educational and research career opportunities in science and engineering.

Each funding agency only supports the research carried out in its own jurisdiction, there is no cross-participant

co-funding of individual awards. To date the DfE has agreed to support 64 projects, representing a total investment locally of over £18.9 million. The annual budget for funding projects under the US-Ireland R&D Partnership is capped at £2million. In CY 2022, a total of five US Ireland R&D Programmes funded by the Department were health related.

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## Department for Education



### Department for Education

The Department for Education (DfE) is responsible for children's services and education, including early years, schools, higher and further

education policy, apprenticeships and wider skills in England. DfE is a ministerial department, [supported by 18 agencies and public bodies](#). The DfE conducts and commissions research on subjects across its entire portfolio of business. Research may be commissioned to provide policy and delivery teams with development information about the nature of an issue or to support identification of options available to affect change. The DfE also commissions evaluation studies to assess the impact of policy change and intervention delivery.

The department conducts research and analysis both internally and via external open competition. All analysis is driven by clear prioritisation of the departmental priorities, policy need and expected impact of the evidence produced. The department also engages with other researchers in a number of flexible ways; such as providing part funding or indicating support for bids. We are developing more systematic ways to make use of our data and linked datasets and to engage with researchers and research/scientific organisations in more collaborative ways.

There are a range of ways that education and health interests overlap. The response to the Covid-19 pandemic required very close engagement between the health and

education departments. Work covered epidemiological assessments of the spread of the disease, the role of schools in preventing transmission and the impacts of school closures on mental and physical health outcomes.

A linked data asset, the Education and Child Health Insights from Linked Data (ECHILD), has been developed by UCL to allow researchers to address questions that link child and family health issues to school performance and attainment. This asset has been further developed and extended by the Department for Education as part of a cross-government exercise that has also invested time to identify policy issues that can be addressed using this new opportunity.

There are various areas in which the department is also drawing on health related research and evidence; including children's and young-people's mental health, the role of good quality school food, physical activity in development (physical, mental, emotional and social), learning and attainment, and support for children and young people with Special Education Needs and Disabilities (SEND). We use our regular panel surveys of teachers and leaders and parents and pupils to address topical policy issues and our new cohort studies allow us to identify evidence on developmental issues from birth through to adolescence, through all stages of education and care, in greater detail.

## Department for Environment, Food and Rural Affairs



### Department for Environment Food & Rural Affairs

The Department for Environment, Food & Rural Affairs (DEFRA) is the UK government department responsible for

safeguarding the natural environment, supporting world-leading food and farming industry, and sustaining a thriving rural economy. Our broad remit means we play a major role in people's day-to-day life, from the food we eat, and the air we breathe, to the water we drink.

The environment is fundamental to all that we do, and we must protect and enhance it. Our job is to make our country a great place for living. We do this by supporting our superb food, farming and fisheries industries, enhancing our beautiful rural environment, and better protecting against flooding, disease and other natural threats.

DEFRA conducts research and analysis to provide evidence for decision-making, ensuring Defra's policies are based on a sound, comprehensive understanding of current evidence. It helps us find new policy solutions and identify and tackle future issues. We use the term 'evidence' to encompass material from a variety of disciplines – science research, statistics, economics, social research or operational research, and geographical information. We use a variety of quality assurance processes.

Defra research projects cover research in natural and social sciences as well as projects on economic analysis, monitoring, testing and surveillance activities. They have

been commissioned to provide evidence which underpins Defra's policy formulation and development.

Human health research cuts across several areas of Defra's domain. These often involve consideration of the complex and multifaceted interaction between the environment and human activity, and the application of multiple disciplines. [Defra Group's Research and Innovation Interests](#) include many areas with implications on health. Of the key areas in Defra's outcome systems One Health (the system linking human, animal and environmental health), environmental quality (including supporting the goals of the [25 Year Environment Plan](#)), sustainable food & farming, food safety, and biosecurity have a particular human health involvement.

Details of all these Defra-funded projects are available through our [science and research projects database](#). Our searchable system provides a range of information on completed and ongoing projects (such as title, cost, contractor, duration, description, reports, etc.).

To obtain information on health-relevant projects for this analysis, the project manager at MRC used awards from our database as they appear on the independent *Dimensions* platform as at 01 May 2023. These were then manually checked for health-relevance and classified using a mix of manual and automated HRCS coding. Of the 230 awards in *Dimensions* active in 2022, 67 were selected for this analysis.

## Department for Levelling Up, Housing and Communities



### Department for Levelling Up, Housing & Communities

The Department for Levelling Up, Housing and Communities supports communities across the UK to thrive, making them great places to live and work. DLUHC is a ministerial department, supported by 16 agencies and public bodies. Our work includes investing in local areas to

drive growth, create jobs and level up, delivering the homes our country needs, supporting our community and faith groups, overseeing local government, planning and building safety, and strengthening the Union.

Most analysts are based in Analysis and Data Directorate. Research carried out or commissioned by the Department flows from the Department's strategic priorities. Our 'Areas of Research Interest', published in July 2022, sets out our main work areas and how analytical work is organised. Our evaluation strategy, published in November 2022, provides

an overview of recently completed work, outlines evaluation activity that is already underway, future plans and a list of published evaluations. In addition, we are listing all new commissioned research projects, from January 2023, on [gov.uk](https://www.gov.uk) website.

Many of our research projects have cross-cutting focus including health. These include long-term projects such as the major flagship English Housing Survey (EHS) which collects information about the physical condition of the housing stock and the characteristics of inhabitants. We are responsible for the English Indices of Deprivation (which includes a health-related domain) and continue to work on updates. Some of our long-term evaluation of programmes to support vulnerable groups include a focus on physical/mental health and improving life chances. This includes the evaluation of the Troubled Families programme, with its pioneering approach to data sharing and now work on Supporting Families.

The Department continues with an active programme of research, including:

- a newly commissioned evaluation assessing the impact of the Domestic Abuse Duty and research on the flows and causes of homelessness and evaluations of key homelessness policies. These projects will include a focus on substance use, physical and mental health, and wellbeing

- two of the levelling-up missions focus on health: the health mission, which focuses on healthy life expectancy, and the wellbeing mission. The Department supports DHSC to gather the relevant evidence and analysis to develop health mission trajectories to track progress. The Department also does wider spatial analysis, which includes some focus on health issues, such as ill-health and economic inactivity, or children's mental health and educational attainment
- allied to health is the Department's interest in adult social care. Adult social care analysts work collaboratively with DHSC/NHS England, and the wider sector, to understand the impact of adult social care on outcomes for care users and carers, and the financial sustainability of the system. Our analysts work to understand how new data sources, such as the NHS's client-level dataset, might be linked to other health data to understand an individual's routes into and through social care. Work has also been done to improve the visibility of adult social care data including the development of metrics for the Office of Local Government (Oflog) and the impact of the Better Care Fund on hospital discharge and the provider market

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## Department for Science, Innovation and Technology



### Department for Science, Innovation, & Technology

The Department for Science, Innovation and Technology (DSIT) brings together the relevant parts of the former Department

for Business, Energy and Industrial Strategy and the former Department for Digital, Culture, Media and Sport. The Department's responsibilities include:

- positioning the UK at the forefront of global scientific and technological advancement
- driving innovations that change lives and sustain economic growth

- delivering talent programmes, physical and digital infrastructure and regulation to support our economy, security and public services
- R&D funding

The Department works with 15 agencies and public bodies, providing core funding to support research and innovation. These include executive non-departmental public bodies such as UK Research and Innovation and the newly created Advanced Research and Invention Agency. The Department also joins other organisations in consortia to support other grant-giving funders, such as the Academy of Medical Sciences.

## Department for Transport



Department  
for Transport

The Department for Transport (DfT) works with its partners and agencies to support the transport network and to keep

people, goods and services moving around the UK. DfT has five strategic priorities:

1. Grow and level up the economy, ensuring transport fulfils its growth potential through improving connectivity across the United Kingdom and enhancing the transport network, on time and on budget.
2. Improve transport for the user, building confidence in the transport network and improving transport users' experience, ensuring that the network is safe, reliable, and inclusive.
3. Reduce environmental impacts, tackling climate change, improving air quality, biodiversity and ensuring the transport system adapts to be resilient to the effects of climate change.
4. Increase our global impacts, boosting our influence and maximising trade by having an innovative, outward-facing approach.
5. Be an excellent department, to ensure DfT is a department that continuously improves its delivery, and where people feel well supported, are able to reach their potential, learn and enjoy working.

DfT is committed to making policies which are based on evidence. Purpose of our research is to build our evidence base to inform decision making. We use research to understand the context in which we are working and the challenges we are facing, and how these will change over time. We also use research to understand the likely impacts of our policies and to evaluate their effectiveness. DfT's research needs are met in a variety of ways to ensure the

most timely, focused and cost-effective evidence generation. Some of our research needs are directly commissioned using dedicated budgets held by policy teams. However, the largest proportion of our evidence comes from existing research produced outside the Department, for example by academia and industry. We also work very closely with the wider research community to inform them of our interests. DfT's [Areas of Research](#) Interest publication is the key tool used to communicate our research needs and provide an overview of our research priorities.

Transport plays a key role in the way people live their lives and is important for supporting health and wellbeing. We are interested in research that increases our understanding of how transport promotes health and wellbeing, particularly on the ageing population. Our second [Cycling and Walking Investment Strategy](#) outlines our commitment to encourage physical activity through active travel and our interest in clean, sustainable technology for travel to reduce air pollution is highlighted in [Reducing emissions from road transport: Road to Zero Strategy](#). We are also interested in understanding how transport use is changing as we recover from COVID-19. In response to COVID-19 we commissioned several projects exploring how the pandemic had impacted on travel behaviour, such as the [All Change Travel Tracker](#) and [Surveys exploring public attitudes to international travel during COVID-19](#).

Please note that DfT Annual Report and Accounts are available online (latest one relates to 21/22) but this gives a total figure for science, research and support functions. It is not possible to distinguish health research spend from other research spend.

## Department for Work and Pensions



### Department for Work & Pensions

The Department for Work and Pensions (DWP) is the UK's largest public service department, developing policy and delivering essential services

on work, welfare, pensions and child maintenance. DWP has a strong record of producing, sponsoring and using robust, rigorous and timely research to underpin the development of its policies and operations. DWP's [Areas of Research Interest](#) publication summarises the most important research questions facing DWP over the next 5 to 10 years. The purpose is to raise awareness and improve understanding of these amongst the external research community.

The Joint Work and Health Directorate is a joint unit working to ministers of both DWP and Department of

Health and Social Care (DHSC). The Directorate's vision is *"To open up opportunities to good work, supporting a healthier, more productive and inclusive nation, through helping more disabled people and people with health conditions to: start good work, stay and succeed in good work where it is appropriate to do so; and; get back into good work as quickly as possible once they have fallen out of work."*, see [Transforming Support: The Health and Disability White Paper](#) for more details. Research and analysis play a critical role in building the evidence base to support strategy, policy and delivery in meeting the aims of the Directorate. In addition to significant policy and economic analysis, the analytical arm of the Directorate carries out and commissions sophisticated quantitative and qualitative analysis, as well as a long-term research and evaluation programme.

## Health Education England



### Health Education England

Health Education England (HEE) exists for one reason only: to

support the delivery of excellent healthcare and health improvement to the patients and public of England by ensuring that the workforce of today and tomorrow has the right numbers, skills, values and behaviours, at the right time and in the right place.

HEE is an Executive Non-Departmental Public Body (NDPB) and an arm's-length body (ALB) of the Department of Health and Social Care (DHSC). Our role is to provide system-wide leadership and oversight for workforce planning, education and training across England. HEE has a total operating budget of £4.9 billion and employs nearly 2,000 people in a variety of leadership, education and support roles, most of whom are based in local teams across England.

## UK Health Security Agency



UK Health  
Security  
Agency

The UK Health Security Agency (UKHSA) is an executive agency, sponsored by the [Department of Health and Social Care](#), whose remit is to protect every member of every community from the impact of

infectious diseases, chemical, biological, radiological, and nuclear incidents, and other health threats. As a Public Sector Research Establishment (PSRE), our health research is mainly funded through external competitive awards.

As with other DHSC sponsored organisations, the majority of research funding is administered by the National Institute

for Health and Care Research (NIHR), for example, the NIHR Health Protection Research Units (see [here](#)). We also work closely with research funders to commission funding calls that align with research priorities and evidence gaps identified during a public health response, such as COVID-19 or MPox. UKHSA has close connections with academia and funds PhD studentships annually, and we have a network of academic honorary contracts holders who support our work to achieve our strategic goals (see [here](#)).

## UK Space Agency



The UK Space Agency plays a major role in delivering the government's National Space Strategy.

We support a thriving space sector in the UK, which generates an annual income of £16.5 billion and employs 47,000 people across the country.

Our staff includes scientists, engineers, commercial experts, project managers and policy officials who help to:

- catalyse investment to support projects that drive investment and generate contracts for the UK space sector
- deliver missions and capabilities that meet public needs and advance our understanding of the Universe
- champion the power of space to inspire people, offer greener, smarter solutions, and support a sustainable future

We are an executive agency of the Department for Science, Innovation and Technology (DSIT).

The UK Space Agency supports Life Sciences/Space Medicine work mostly through the UK's subscription to ESA's European Exploration Envelope (E3P) programme, alongside some complementary national funding.

Within E3P, ESA run a programme called SciSpacE which enables scientific activities on research facilities which are either space analogues or space itself, also referred to as microgravity facilities. These facilities include bedrest studies, parabolic flights, and experiments on-board the International Space Station.

The UK supports SciSpacE through funding provided to ESA for E3P, as well as providing national funding to UK academics whose projects have been selected by ESA for SciSpacE (c. £1M a year). We have a variety of current SciSpacE projects with USKA supported UK academics who are looking at space medicine.

The UK Space Agency has also funded a number on Healthcare Space Applications. There are several terrestrial opportunities for advances in healthcare through downstream applications. The UK Space Agency's Business Applications Space Solutions (BASS) programme have funded a number of these opportunities.

## Sport England



Sport England believes sport and physical activity has a big role to play in improving the physical and mental

health of the nation, supporting the economy, reconnecting communities, and rebuilding a stronger society for all. We work with national and local partners to ensure everyone in England can benefit from sport and physical activity.

Sport England's research activities can be divided into three broad categories:

- **evaluation of grant awards** - each year Sport England invests more than £250 million of National Lottery and public money to help people play sport and take part in physical activity. Evaluating the effectiveness of these investments is central to our work
- **population measurement** - Sport England is responsible for the Active Lives Adult and Active Lives Children and Young People surveys. Together, these provide a detailed picture of engagement in sport and physical activity in England by people aged 5 years old and above

- **other research spend** - Sport England also invests in a range of other research projects to develop the evidence base for sport

The physical and mental health benefits of sport and physical activity are well understood. A central commitment of Sport England's strategy is to increase the number of people reaching the Chief Medical Officer's recommended level of physical activity and reducing the number of people who are physically inactive, tackling inequalities in activity levels as we do this.

Sport England's net spending on research and evaluation is approximately £3 million per year. This money is primarily spent on the evaluation of awards and population measurement.

# Academies, Royal Colleges and Professional Bodies

## Academy of Medical Sciences



The Academy of Medical Sciences is the independent, expert voice of biomedical and health research in the UK. Our mission is to help create an open and progressive research sector to improve the health of people everywhere. The Academy has a portfolio of grant schemes supporting those on the clinical training pathway and those working in basic biomedical and health research in the UK and overseas. All funded research reflects our vision of good health for all supported by the best research and evidence.

All awards that were live in 2022 were included in the analysis. The data included was a combination of grants data provided by The Academy as well as UKRI extracting the grants from Europe PubMed Central, using the *Dimensions* platform from Digital Science. Manual coding using HRCS for non-ePMC awards was applied by MRC, whilst any ePMC records were coded using the *Dimensions* automated HRCS. A total of 380 awards were included with an award value totalling approximately £31m in 2022.

## The British Academy



The British Academy is the UK's national academy for the humanities and social sciences. We mobilise the SHAPE disciplines (social sciences, humanities and the arts for people and the economy) to understand the world and shape a brighter future. With a Fellowship of around 1,400 leading national and international academics, the Academy invests in researchers and projects across the UK and overseas; engages the public with fresh thinking and debates; and brings together scholars, government, business, and civil society to influence policy.

The British Academy funds a range of research across the humanities and social sciences, both nationally and internationally. We also promote interdisciplinarity by supporting research which interrogates the relationship between the humanities, social sciences and other disciplinary areas. Our funding supports scholars at all career stages: from postdoctoral researchers to mid-career and senior academics. Our international funding crosses disciplinary and geographical boundaries in order to demonstrate the importance of the SHAPE disciplines in addressing today's global challenges.

With the generous support of the Wellcome Trust, in 2022 the British Academy was able to add to the broader stream of completely open research-led Small Research Grants a number of specifically health-related awards including Small Research Grants, British Academy Conferences, and a series of health policy workshops, designed to foster discussion and debate on health and wellbeing-related themes, thus highlighting the importance of the humanities and social sciences in tackling health-related challenges. A range of awards related to health and wellbeing were also funded under the British Academy's international programmes: a total of 45 awards in this area were supported.

The British Academy's most pertinent health- and wellbeing-related awards and activities active in 2022 were included for this review, and manually coded in HRCS by MRC. This includes those programmes funded through the support of the Wellcome Trust, and other health-related grants supported by the British Academy. The total funding awarded by the British Academy over the lifetime of these grants was over £13m.



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## The Royal Academy of Engineering



As the UK's National Academy for engineering and technology, the Royal

Academy of Engineering brings together the most talented and successful engineers – our Fellows – to advance and promote excellence in engineering for the benefit of society. Our overarching goal for 2025 is to harness the power of engineering to build a sustainable society and an inclusive economy that works for everyone. The Academy works in three ways to address the goals: fostering talent and diversity, promoting innovation, influencing policy and public perceptions. In keeping with our values, many – if not all – of these goals will be delivered through active collaboration with key partners around the world, across and beyond engineering.

The Academy supports these strategic priorities through our Research Programmes, by making awards to the most

promising and talented researchers in the UK across the full breadth of engineering. The awards provide distinctive rounded support, providing not only funding, but also training, access to our networks, and mentoring from our prestigious Fellowship. We also provide ongoing support through our newly launched Awardee Excellence Community. The Academy's research programmes are funded by BEIS and other organizations such as the Leverhulme Trust.

Health-focused researchers can currently be found in most of our awardee cohorts across each programme (or can be identified in past cohorts which the Academy has previously funded).

The data presented here highlights the work of our 35 current awardees focused on healthcare, representing almost 28 million pounds of funding. Manual coding of HRCS was provided by MRC.

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## Faculty of Intensive Care Medicine



The Faculty of Intensive Care Medicine is the professional body

responsible for the training, assessment, practice and continuing professional development of Intensive Care Medicine doctors and practitioners in the UK. The Faculty was founded in 2010 and has over 4,500 members, making it the largest organisation of critical care medical professionals in the UK. One of the Faculty's main aims is to promote the specialty and engaging with healthcare policy, including some research-related initiatives.

These include:

- supports research prizes with the NIHR
- supports research through the CCT in Intensive Care Medicine curriculum

- hosts and chairs the National Adult Critical Care Data Group (NACCDG), which has brought together stakeholders from across the NHS and critical care data management to take forward audit collection. The group advises on the development, content, and use of current and future national data within critical care to improve care, support and aid future research and drive change in processes and outcomes for critically ill patients

## Faculty of Public Health



The Faculty of Public Health (FPH) is the leading professional body for public health specialists and practitioners in the UK. The Faculty is a membership organisation for around 5,000 public health professionals across the UK and around the world and is also a registered charity. The Faculty's role is to improve the health and wellbeing of local communities and national populations, by supporting the work of our members. This

includes encouraging and promoting new research and understanding of public health through our Journal of Public Health, award-winning blog and annual events, lecture and conference programme. Currently the Faculty is not a grant-giving body and does not commission research but supports the research environment through advocacy for the public health research workforce, five yearly curriculum reviews and in partnerships with nationwide public health initiatives/collaborations.

## Medical Schools Council



The Medical Schools Council is the representative body for all 40 UK medical schools, which provide a key interface between health research and higher education. Medical schools are a base for clinical academics, who drive innovation and educate future generations of

researchers, while the Council acts as a forum for directing national policy in medical school research. Together with the GMC, the MSC created the UK Medical Education Database, a large-scale longitudinal data resource for researchers to access and build an evidence base for medical education, selection and workforce decision-making.

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## Royal College of General Practitioners



The Royal Collage of General Practitioners (RCGP) is the UK's professional home for GPs. Our purpose is to encourage, foster and maintain the highest possible standards in general medical practice. We support GPs through all stages of their career, from medical students considering general practice, through to training, qualified years and retirement.

We recognise the vital role that high quality research and objective evidence plays in informing policy, clinical decision-making and underpinning the best possible care for patients.

Our Research Programme:

- facilitates research making it more relevant to GPs
- upskills and enables GPs and practices to participate in research (including through funding research grants and fellowships)

- highlights and celebrates the highest quality research from the UK to support clinical practice and patient care
- influences primary care research and funding within the UK
- has a practice network which monitors communicable diseases, vaccine uptake participates in national and international research projects

RCGP supports, celebrates and facilitates research, and encourages the dissemination of research findings across the primary care community.

The RCGP Scientific Foundation Board (SFB) award fellowships and grants to support General Practice-led research activities. Via the SFB we offer two types of research grant: Annual Grants (up to £30,000) and Practitioner Allowance Grants (PAGs) (up to £2,000). In 2022, the SFB awarded three Annual Research Grants to

## Appendix 1

one researcher from England, one from Scotland and one from Wales. SFB also awarded three PAGs. In 2022 overall, the SFB had 20 active research grants.

RCGP SFB advertises joint-funded awards with partners whenever possible to celebrate the best of primary care research. Collaborating with the Society of Academic Primary Care, we offer two Outstanding Early Career Researcher Awards, one for a GP and the other for a Primary Care Scientist.

The RCGP works closely with the National Institute for Health and Care Research (NIHR) and NIHR Clinical Research Network (NIHR CRN) to offer a joint award for First5s and practices, specifically for those who participate in NIHR research. The College also works with the NIHR CRN to identify the important research areas within general practice and to prioritise these.

The RCGP annually holds a Research Paper of the Year award, an award that goes to an exceptional piece of research relating to general practice or primary care. Papers will fall within three categories (clinical research,

health service research - including public health and implementation and medical education - related to primary care). One paper will win from each category and one of these will win the overall award.

RCGP also analyses NHS and public health data to develop an accurate understanding of the current state of general practice. The College uses this evidence to inform our influencing work to shape effective policy making and to ensure that public narratives are accurate. We also commission research to help to inform our policy development work. This includes commissioning surveys of GPs across the UK to understand their experiences and how to improve their jobs and the care they can deliver.

The RCGP Research and Surveillance Centre collaborates with the University of Oxford and UKHSA to monitor and report on the incidence of common illnesses in the community. The RSC also performs specific research studies into many important research topics that effect general practice and primary care, nationally and internationally.

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## Royal College of Obstetricians and Gynaecologists



Royal College of  
Obstetricians &  
Gynaecologists

The RCOG works to improve women's health care across the world. Founded in 1929, we

now have over 16,000 members worldwide and work with a range of partners both in the UK and globally to improve the standard of care delivered to women, encourage the study of obstetrics and gynaecology (O&G), and advance the science and practice of O&G.

Currently, the Clinical Quality team aims:

- to work in partnership to develop and deliver quality improvement projects based on robust methodologies including, but not limited to, care bundles, service evaluations and implementation tools
- to conduct high quality clinical audit and informatics projects using real-time data and large data sets, to produce evidence-based analyses of clinical issues

Examples of our recent/current projects:

- [National Maternity and Perinatal Audit \(NMPA\)](#): A large-scale audit of the NHS maternity services across England, Scotland and Wales
- [Tommy's National Centre for Maternity Improvement](#): A national programme of work aimed at reducing the numbers of babies born prematurely or stillborn each year in the UK
- [OASI](#): A quality improvement programme aimed at (1) developing a care bundle to reduce the rate of obstetric anal sphincter injury (OASI) and (2) implementing the care bundle within UK maternity services

RCOG Research is the College committee with a specific focus on research. The committee acts as a link between our Specialist Societies and the NIHR and other funders. It receives and reviews PICOs from specialist societies and is able to match make with funders to advance the cause of research across all aspects of Women's health.

## Royal College of Pathologists



The Royal College of Pathologists  
Pathology: the science behind the cure

The Royal College of Pathologists is a charity with over 12,000 members

worldwide. Most members are doctors and scientists working in hospitals and universities in the UK. The College oversees the training of pathologists and scientists working in 17 different specialties, which include cellular pathology,

haematology, clinical biochemistry and medical microbiology. While the College does not fund research activities directly it is committed to promoting excellence in the study, research and practice of pathology and to being responsible for maintaining the highest standards through training, assessments, examinations and professional development, for the benefit of the public.

## Royal College of Radiologists



The Royal College of Radiologists (RCR) leads, educates and supports doctors who are training and working in the

specialties of clinical oncology and clinical radiology and improve the standard of practice in them. The Academic Committee gives out annual grants and fellowships to members to encourage and foster research and contribute to improving the quality of imaging research in the UK.

The following are bequests awarded annually:

- Constance Thornton Fellowship - For projects in cross sectional imaging or paediatric radiology
- Seed Grant - For furthering a research project or radiological interest in the UK or abroad
- Kodak Fellowship - Intended toward supporting research activity, for example, for a scientific and educational research project in the UK or abroad
- Kodak Research Bursary - Intended for a research project or furthering a radiological interest in the UK or abroad

There are dedicated budgets for the below also awarded annually:

- Joint CRUK CRTF Fellowship - Established in 2010, these Clinical Research Fellowships are administered by the Cancer Research centres across the UK – annual contribution scheme
- Joint MRC CRTF Fellowship - Established in 2005, these Joint Fellowships are administered by the Medical Research Council (MRC) and are on a shared funding basis

The following are awarded biennially:

- Karol Slicher Cancer Research Fellowship - Supports three-month secondments in the UK or abroad to gain technical skills in cancer diagnosis, assessment or management
- NIHR Outstanding Researcher Awards - Established in 2017, this scheme is jointly sponsored by the RCR and National Institute for Health and Care Research (NIHR) to recognise the contribution that clinical radiologists make to radiology research in the NHS

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## UK Clinical Virology Network



The United Kingdom Clinical Virology Network (UK CVN) consists of a linked and co-ordinated group of laboratories distributed throughout the UK and Ireland. It provides advice to membership and to Government, Chief Medical Officers, National Health Services, Public Health bodies and professional societies on all aspects of viral disease and infection. The aim of the UK CVN is to promote the interests of clinical virology, and its medical and laboratory practice in the United Kingdom and Ireland. The UK CVN promotes agreed protocols for the management of viral diseases and best laboratory practice, supports a rapid and considered response to virological emergencies; acts as an education and training resource, and undertakes related activities.

The over-riding consideration for UK CVN research grants is that the research project should be demonstrably of value to clinical virology laboratories, and applicants will be asked to explain how their research will benefit the CVN. Applicants must be members of the CVN or belong to laboratories/organisations that are CVN members. Grants are offered as and when the UK CVN financial position permits. This is usually every two years. In 2021, the UK CVN Executive Committee announced a competition for one major two-year research grant up to the value of £40,000, and two pump priming small research grants, up to the value of £5000. The committee received one application for the major award, and three applications for the pump-priming awards.

# Charities, Foundations and Trusts

## Members of the Association of Medical Research Charities

### Action for A-T



Action for A-T funds medical research to speed up the process of identifying a cure for Ataxia Telangiectasia

(A-T) or treatments that delay or prevent the disabling effects of this devastating childhood condition. We passionately believe that with increased funding and continued global and collaborative effort, effective treatments for A-T will be developed and the lives of those affected will be changed. We are the leading charitable funder of A-T medical research in the UK.

A-T is a rare, genetic, neurodegenerative disease of childhood, which affects multiple systems of the human body. A diagnosis of A-T often comes as a huge shock. Health progressively deteriorates causing an overall loss of coordination and muscle control. Children become full time wheelchair users by the second decade of life (around the age of 10) and progress to needing assistance with everyday tasks. People with A-T are also predisposed to developing cancer and their immune system is weakened. Life span is shortened with those affected generally living until their twenties. There is currently no cure or treatments to slow down or stop the progression of the disease.

### Action Medical Research



Action Medical Research is the leading UK-wide charity dedicated to funding vital research to help sick and

disabled babies and children. They have been funding medical breakthroughs for over 70 years and have helped to beat polio, fight meningitis, prevent stillbirths and develop ultrasound scanning in pregnancy. They fund a wide range of cutting-edge medical research most likely to deliver real benefit to babies, children and young people.

### Against Breast Cancer



Against Breast Cancer funds research designed to improve detection, treatment and increase survival after

breast cancer diagnosis. Our goal is to prevent secondary spread, the main cause of breast cancer related deaths.

To achieve our goal, we focus our research on three key areas; prevention, detection and the development of new therapies against breast cancer.

## Alopecia UK



Alopecia UK is a charity working to improve the lives of those affected by alopecia through aims of Support, Awareness and Research. We deliver peer support to help people feel less isolated and more confident. We help people feel better

informed about their condition and signpost to appropriate products and services that can help. We raise awareness of alopecia, to both the general public and healthcare professionals, to create a more informed, understanding and empathetic society. We provide hope to those with alopecia by supporting and funding research to better understand alopecia and find treatment options and, ultimately, a cure.

## Alzheimer's Research UK



Alzheimer's Research UK funds research into the causes, diagnosis, prevention, treatment and cure for dementia. Backed by

passionate scientists and supporters, they're challenging the way people think about dementia, uniting the big thinkers in the field and funding the innovative science that will change lives. Their singular focus on research means that they can channel their expertise and energy with maximum benefit, to make the greatest difference to people affected by dementia today and in the future.

## Alzheimer's Society



[Alzheimer's Society](#) is the UK's leading support and research charity for people with dementia, their families and carers. Together we are help and hope for everyone living with dementia.

Dementia affects over 900,000 people in the UK. The Society provides information and support to people with any form of dementia and their carers through our

publications, Dementia support line, website and our innovative dementia support services throughout England, Wales and Northern Ireland. Alzheimer's Society influences politicians and policy-makers, and campaigns for better quality of life for people living with dementia and their carers, including a greater understanding of the diseases that cause dementia.

Alzheimer's Society has been a funder of innovative dementia research for over 30 years and today funds research that focuses on improving diagnosis, finding new treatments and improving the care and support that is available for people living with dementia. The Society's pioneering research programme works in collaboration with scientists and people affected by dementia to ensure that the medical and social research programmes the Society funds address the greatest challenges in dementia research.

## Anthony Nolan



Anthony Nolan's vision is A future where every patient who needs us can survive and thrive. The charity funds

research to facilitate advancements in stem cell treatments for people with blood cancer and blood disorders. This research aims to:

- improve the survival rates, treatment experience and quality of life for every transplant patient
- increase equity so every patient has the best possible access to, experience of, and outcome from treatment
- explore and embrace new stem cell therapies and make them available for patients more quickly

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## Antibiotic Research UK



Antibiotic Research UK raises funds to support antibiotic research, provide information and support to patients and families affected by antimicrobial resistance, raise awareness about its work among the

public and professionals, and influence and campaign for better national and international approaches to tackle antimicrobial resistance.

We fund a research programme comprising a range of grants for early/new projects in the field of antimicrobial resistance, support for our MUTATE programme which has found potential for repurposed combinations of existing drugs to be effective new antibiotics, and funding for antibiotic stewardship programmes.

Antibiotic resistance, that is when infectious bacteria become resistant to antibiotic treatment, is on the rise globally. It has been estimated that in 2019, 1.27 million people died globally directly from an antibiotic resistant infection ([https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0)), a figure higher than people dying from HIV or malaria. This figure is alarming and whilst the highest number of deaths were in lower- and middle-income countries, COVID has shown us how quickly an infectious agent can spread around the globe.

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## Asthma + Lung UK



At Asthma + Lung UK our vision is for a world where everyone has healthy lungs. A world where lung health is prioritised through better understanding, research, treatment

and support. We are dedicated to helping create a world where good lung health and the ability to breathe freely are a basic right enjoyed by all. And we will be the driving force behind the transformation of lung health. From research and campaigning to advice and support, as the nation's lung charity we are on a mission to change the way that lung health is perceived.

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## Ataxia UK



Ataxia UK funds, promotes and facilitates research into finding treatments and cures for the ataxias, which are a group of rare neurological disorders. The charity raises funds for medical research into finding treatments and cures for the ataxias, to raise awareness, and to offer support, advice and information for people living with the condition.

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## Ataxia-Telangiectasia Society



The AT Society is the only UK charity providing expert support, advice and care for children, young adults, and

their families whose lives have been shattered by a diagnosis of ataxia telangiectasia (AT) - a serious and complex, life-limiting condition, for which there is no cure.

We work collaboratively with AT scientists around the world to fund essential medical research to improve care and treatments for AT, and to ultimately speed up the process of identifying a cure.



## Autistica



Autistica is the UK's leading autism research and campaigning charity. Our mission is to create breakthroughs that enable all

autistic people to live happier, healthier, longer lives. They do this by funding research, shaping policy and working with autistic people to make more of a difference. Autism comes with both strengths and challenges and every autistic person is different. Research is the best way to improve understanding, find new ways to support people and families, and change lives for the better. Autistica is making more of a difference by:

- funding, shaping and growing research across the UK
- developing new therapies
- Campaigning for better services and shaping national policy
- sharing evidence-based tools, resources and information

## Barts Charity



Barts Charity is dedicated to supporting improvements to healthcare and transformative research to benefit the health

of the people of East London. We do this by funding high-quality research, innovative patient care projects and NHS staff wellbeing initiatives that would otherwise not be funded by the NHS or other funders.

We focus our funding on supporting Barts Health NHS Trust, which runs St Bartholomew's, The Royal London, Mile End, Whipps Cross and Newham hospitals, and on the Faculty of Medicine and Dentistry at Queen Mary University of London, where there are six medical research institutes. We also support researchers at the School of Health Sciences at City, University of London.

## Big C



**Support.  
Research.  
Equipment.  
Education.**

Big C is a cancer charity dedicated to the delivery of innovative, outstanding and cancer patient focused

support and information services across Big C acute and community centres; investment into world-class cancer research; funding of diagnostic and treatment equipment; and the development of educational activities and programmes which have a positive impact on individual's wellbeing and career choices. Big C is proud to invest in ground-breaking cancer research projects taking place in Norfolk at the world-renowned Norwich Research Park. The work, carried out by leading scientists in their field, is making a local, national and international difference in the fight against cancer now and for tomorrow.

## BLISS



Bliss exists to give every baby born premature or sick in the UK the best chance of survival and quality of life. We champion their

right to receive the best care by supporting families, campaigning for change, supporting professionals and enabling life-changing research.

We aim to put parents' and babies' voices at the heart of research and use new evidence to inform tangible improvements in care on the ground. Our long-term ambitions for putting research into practice include for all Bliss-supported projects to involve meaningful consideration of inequalities in research design and delivery, and for more parents of babies admitted to neonatal care to understand the role of research in improving care.

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## Blood Cancer UK



Blood Cancer UK (formerly Bloodwise) is part of a community dedicated to beating blood cancer. We do

this by funding research and supporting those affected. Since 1960, we've invested over £500 million in blood cancer research, transforming treatments and saving lives. Right now, our community is funding 167 researchers and staff across the UK who are searching for the next breakthrough. The day we will beat blood cancer is now in sight and our researchers are determined to finish the job.

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## Bone Cancer Research Trust



Bone Cancer Research Trust is the leading charity dedicated to saving lives and improving outcomes for

primary bone cancer patients through research, information, awareness, and support. Since 2006, we have committed over £8 million to national and international collaborative research projects and we continue to expand our research network, encouraging more researchers to focus their expertise on primary bone cancer.

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## Borne



The Borne Foundation is an independent medical research charity. Their mission is to advance

education and advance, promote and support research, with any useful results of such research being published, so as to prevent death and disability in pregnancy and childbirth, and create lifelong health for mothers and babies.

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## Bowel Cancer UK



Bowel Cancer UK is the UK's leading bowel cancer charity. We're determined to save lives and improve the

quality of life of everyone affected by bowel cancer. We support and fund targeted research, provide expert information and support to patients and their families, educate the public and professionals about the disease and campaign for early diagnosis and access to best treatment and care. For more information visit [bowelcanceruk.org.uk](http://bowelcanceruk.org.uk)

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## BRACE



BRACE funds research to improve understanding of the causes of dementia, improve diagnosis, and help

develop new forms of treatment. They raise funds for dementia research and awards grants for research at universities in south west England and south Wales.

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## Brain Research UK



Brain Research UK funds research to reduce the impact of neurological conditions, to help people

live better, longer. They are currently focusing their research funding on three priority areas: headache and facial pain, neuro-oncology, and acquired brain and spinal cord injury.

## Brain Tumour Research



The vision of Brain Tumour Research is to find a cure for all types of brain tumours. Our mission is to

increase the UK investment in brain tumour research to £35m a year while fundraising to create a sustainable network of seven Brain Tumour Research Centres of Excellence across the UK.

Brain tumours are indiscriminate and can affect anyone at any age, what's more they kill more children and adults under the age of 40 than any other cancer. Historically, just 1% of the national spend on cancer research has been allocated to this devastating disease and we are determined to change this.

A powerful campaigning organisation, Brain Tumour Research is the leading voice of the brain tumour community in the UK. We influence government policy and national investment decisions through our ongoing secretariat of the All-Party Parliamentary Group on Brain Tumours (APPGT). We also challenge larger charities to increase their commitment to funding research into brain tumours.

## Breast Cancer Now



Breast Cancer Now is the charity that's steered by world-class research and powered by life-changing

care. We're here for anyone affected by breast cancer, the whole way through their experience, providing support for today and hope for the future. We are funding the brightest minds in breast cancer research, we're discovering how we can prevent, save lives and live well with breast cancer. By 2050, we believe that everyone diagnosed with breast cancer will live – and be supported to live well.

## British Association for Counselling and Psychotherapy



The BACP funds research that informs and develops counselling and psychotherapy practice.

They aim to promote and provide education and training for counsellors and psychotherapists working in either professional or voluntary settings, whether full or part time, with a view to raising the standards of the counselling professions for the benefit of the community and in particular for those who are the recipients of counselling or psychotherapy; and to inform and educate the public about the contribution that the counselling professions can make generally and particularly in meeting the needs of those whose participation and development in society is impaired by physical or psychological health needs or disability.

## British Skin Foundation



The British Skin Foundation funds high quality peer reviewed research into all types of skin disease and skin cancer. Grants are

awarded twice a year with the charity accepting applications from institutions across the UK and ROI.

## British Society For Research on Ageing



The British Society for Research on Ageing (BSRA) is a scientific society (registered charity no.

1174127) which promotes research to understand the causes and effects of the ageing process. The BSRA encourages publication and public understanding of ageing research and holds an annual scientific meeting. Many notable scientists with an interest in ageing are either past or current members of the organisation, which has exerted a marked influence on ageing research within the United Kingdom and internationally.

The BSRA was formed as the “Club for Research on Ageing” by Professor Vladimir Korenchevsky (1880–1959) at some point prior to 1939 and as thus has a valid claim to be the world’s oldest scientific society devoted to research into the biology of ageing.

## Cancer Research Wales



‘The objectives of Cancer Research Wales (CRW) are, for the benefit of the public, to relieve sickness and

promote good health by advancing knowledge and understanding of cancer and its possible treatment and prevention techniques, providing, and supporting facilities for high quality cancer research in Wales and by:

Funding cancer research proposals submitted by scientific investigators associated with other organisations in Wales, including those linked to:

- the National Health Service
- universities and other academic and/or research institutions
- providers of cancer treatment

In giving effect to the above objectives, the Board will use its best endeavours to ensure that monies raised are for the benefit of research or the furtherance of research being conducted in Wales.

## Cerebra



Cerebra is a charity dedicated to improving the life chances of children with neurodevelopmental

conditions through our investment in research. In the UK today there are around half a million children and young people with such conditions that, together with barriers to participation, result in complex medical, educational and social support needs.

At Cerebra we support high-quality discovery and translational research that can improve the quality of life for children with neurodevelopmental conditions and their families. Our aim is to give families access to the highest quality evidence-based information and support so they can begin to tackle the challenges they face and make informed decisions about what is right for them.

## Childhood Eye Cancer Trust



The Childhood Eye Cancer Trust (CHECT) is a UK charity dedicated to helping people affected by retinoblastoma. It:

- provides ongoing support and information to families and individuals
- funds research into the prevention and treatment of retinoblastoma
- raises awareness among health professionals and the public
- influences policy to improve services for patients

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## Children with Cancer UK



Children with Cancer UK is the leading national charity dedicated to research into childhood cancer.

We fund research into the causes and treatment of childhood cancers and provide support for families affected by childhood cancer. We have accelerated breakthroughs to improve childhood cancer survival rates and find kinder, more effective treatments with fewer toxic side effects. This ground-breaking research, which would otherwise go unfunded, saves the lives of children with cancer.

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## Children's Cancer and Leukaemia Group



Children's Cancer and Leukaemia Group (CCLG) is a leading national charity and expert voice for all childhood cancers.

Each week in the UK and Ireland, more than 30 children are diagnosed with cancer. Our network of dedicated professional members work together in treatment, care and research to help shape a future where all children with cancer survive and live happy, healthy and independent lives.

We fund and support innovative world-class research and collaborate, both nationally and internationally, to drive forward improvements in childhood cancer. Our award-winning information resources help lessen the anxiety, stress and loneliness commonly felt by families, giving support throughout the cancer journey.

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## Chronic Disease Research Foundation



The CDRF, an independent medical research charity, funds a range of gene research programs that aim

to discover the cause of common diseases such as arthritis, back pain, migraine, asthma, dementia and heart disease. The CDRF runs many projects at the department of Twin Research, St Thomas' Hospital. We hope that results of this research will contribute to the development of future diagnostic tests and treatments. We rely on non-governmental donations and grants.

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## Coeliac UK



Coeliac UK is the charity for people who need to live without gluten. For nearly 50 years we've been helping

people with coeliac disease and other gluten related conditions live happier, healthier lives. We do this by striving for better gluten free food in more places, providing independent, trustworthy advice and support and funding crucial research to manage the impacts of gluten and find answers to coeliac disease. And we do it all so that one day, no one's life will be limited by gluten.

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## Crohn's & Colitis UK



Crohn's and Colitis are lifelong conditions. They are painful, debilitating, and many people suffer in

silence throughout their lives. But Crohn's & Colitis UK are here for you, every step of the way. Over 500,000 people in the UK are living with Crohn's Disease and ulcerative Colitis, the two main forms of Inflammatory Bowel Disease. That's 1 in 123 people in the UK. Anyone could be diagnosed with the conditions, and whoever you are, a diagnosis of Crohn's or Colitis will be life changing. Since 1979, Crohn's & Colitis UK has been here for everyone affected by Crohn's and Colitis.

## Cure Parkinson's



Cure Parkinson's has one simple aim: to find ways to slow, stop and reverse the condition. It funds preclinical studies and clinical trials, involving people living with Parkinson's in every decision and every process.

## Cystic Fibrosis Trust



Cystic Fibrosis Trust is the charity uniting people to stop cystic fibrosis (CF). We fund vital research, improve care, speak out and race towards effective treatments for all. Cystic Fibrosis Trust is here to make sure everyone with cystic fibrosis can live without limits. The Trust is supporting and enabling the delivery of a broad and dynamic portfolio of world-class research to help ensure every person with CF in the UK can live a long and full life.

## DEBRA



DEBRA UK is a national charity and patient support organisation for people living with the incredibly painful genetic skin blistering condition, Epidermolysis Bullosa (EB). EB causes the skin to blister and tear at the slightest touch, with skin as fragile as a butterfly's wings, it is often referred to as 'Butterfly Skin'.

DEBRA UK works in partnership with the NHS to deliver an enhanced EB healthcare service which is vital for people living with EB. There are four designated EB centres of excellence around the UK providing expert specialist EB healthcare and support, as well as other hospital locations and regular clinics which aim to provide EB services to people wherever they are located.

DEBRA UK supports research programmes that aim to find treatments that will slow, stop, or reverse the progression of EB and works with the EB community, healthcare, and other professionals to improve quality of life for people living with EB. The DEBRA Community Support team offers advocacy, information, and practical help at every stage of

life and the DEBRA membership scheme includes holiday home respite, grants, and bespoke events to support people living with EB.

DEBRA's vision is for a world where no one suffers with the pain of EB.

## Diabetes Research & Wellness Foundation



DRWF is a registered charity (No. 01070607) and company limited by guarantee (3496304) set up in 1998 to raise awareness of all types of diabetes and associated complications; provide information and support to promote good self-management and to enhance quality of life. Whilst funding vital diabetes research to establish the causes, prevention and treatment of type 1 and type 2 diabetes; develop improved management and treatment options; and ultimately find a cure, we aim to ensure that people have access to the right information and support to develop a proactive self-care approach to successful self-management, to ensure that they are "staying well until a cure is found..."

## Diabetes UK



We are Diabetes UK. Our vision is a world where diabetes can do no harm.

We're leading the fight against the UK's biggest and growing health crisis. And it's a fight that involves us all – sharing knowledge and taking on diabetes together.

## Duchenne UK



Duchenne UK funds research to accelerate treatments and find a cure for Duchenne muscular dystrophy. They

are committed to continuing to drive momentum to deliver treatments to help this generation of those with DMD.

Duchenne Muscular Dystrophy is a muscle wasting disease that mainly affects boys. It's the most common fatal genetic disease to affect children. It is 100% fatal and boys die in their early 20s. There are no treatments and no cure.

independent expert opinion, interviews and peer review. Our pioneering clinical research discovers ways to advance the medical care and management of people living with epilepsy and our lab-based scientific projects investigate causes and methods for improved diagnosis, treatment and prevention. We aim to provide help for today and hope for tomorrow.

Alongside developing the next generation of epilepsy research leaders, we play a key role in capacity building the research community. Our internationally renowned Expert Workshop programme and dissemination activities aim to forge local and global collaborations. We also accelerate innovations that improve clinical practice and health policy through partnership working and advocating for further investment in research.

A life free from epilepsy is possible. But only through research.

## Dunhill Medical Trust



The Dunhill Medical Trust is committed to applying its resources to inspiring and

enabling academic researchers and health and social care professionals (from across the disciplinary range) to apply their knowledge and skills to:

- improving the quality of life, functional capacity and well-being for older people now, or
- creating the context for change in the future by preventing, delaying or reducing future health and social care requirements

The Trust also wants to play its part in informing and influencing the collective understanding of “what works”, and enabling community organisations to develop innovative, evidence-informed and best practice ways of delivering care and support for older people – driving the systemic change needed to secure a healthier later life for all.

## Fight for Sight



There are over two million people with sight loss and one in five people will have a serious sight condition in their life time. We are the national charity funding ground-breaking research into

sight loss that's already changing lives today and transforming them tomorrow. We support research into the biology of sight loss conditions, prevention, early detection and treatments. We are committed to revolutionary science, developing researchers, and fostering collaboration. We know that by working with experts in ophthalmology and with our supporters we can make a real difference to the lives of everyone affected by sight loss.

## Epilepsy Research UK



Epilepsy Research UK is the only charity exclusively dedicated to driving and

enabling life changing, life saving research into epilepsy.

The research projects and fellowships we support are of the highest scientific merit and are subject to rigorous scrutiny, involving a Scientific Advisory Committee,

## Friends of EORTC



*The future of cancer therapy*

The Friends of EORTC mission is to help accelerate innovation that will improve every cancer patient's

survival and quality of life by raising funds and awareness for the critical translational, academic and non-pharmaceutical clinical research of the European Organisation for Research and Treatment of Cancer (EORTC).

## Friends of Rosie Children's Cancer Research Fund



Friends of Rosie is a volunteer-led charity that provides funding for children's cancer research to

get new ideas off the ground. Without our help many research projects would never get underway, meaning critical breakthroughs in childhood cancer research being left undiscovered.

When five year old Rosie Larkin lost her battle with cancer in 1991, her friends and family were determined to carry on the fight. They set up the Friends of Rosie Children's Cancer Research Fund. This year we celebrate our 30th birthday – an achievement that has only been possible thanks to our wonderful supporters.

So far, we have funded a total of 28 research projects at a cost of £2.75 million. They cover a wide variety of childhood cancers from neuroblastoma and leukaemia, to osteosarcoma and brain tumours. The research ideas we fund are right at the outset of medical thinking and innovation. We give these ideas the chance to make a difference.

Many childhood cancers still have a poor outlook and today's treatments are harsh, unpleasant and uncertain, especially on young bodies that are still growing.

## Glasgow Children's Hospital Charity



Founded in 2001, Glasgow Children's Hospital Charity (formerly known as Yorkhill Children's Charity) was established to support children and their families treated at Glasgow's Royal Hospital for Sick Children - Yorkhill.

For more than 100 years, the children's hospital in Glasgow has been caring for babies, children and young people from across Scotland and beyond. Since the first children's hospital opened in 1882, Glasgow has played a pioneering role in the treatment of children, and the advancement of global child health. Even in those early days fundraising was vitally important. In 1907, a fundraising appeal was launched to raise £100,000 to build a larger hospital to cater for the growing demand. In 1914 the new hospital opened at Yorkhill, where it remained for 100 years. Generations of families experienced the love and compassion of the staff who cared for them in Yorkhill, and Yorkhill still holds a special place in the hearts of everyone who passed through its doors. In June 2015, the hospital moved from Yorkhill to the Royal Hospital for Children at the Queen Elizabeth University Hospital, where we are proud to support it today.

Since 2001, we have invested more than £30 million in the children's hospital in Glasgow. This has been possible thanks to the generosity of our donors, fundraisers and volunteers, whose support ensures that Scotland's children receive the best possible care. Glasgow Children's Hospital Charity is proud to have invested over £2 million into paediatric research since 2014. The majority of research projects funded by Glasgow Children's Hospital Charity have supported individuals in partnership with academic institutions through PhD studentships, research projects and clinical research training fellowships. This funding has enabled students and young researchers to undertake clinical and scientific projects, and in many cases has led to high-impact, professional publications.



## Grace Kelly Childhood Cancer Trust



The Grace Kelly Childhood Cancer Trust is a national charity that provides support to families affected by childhood cancer. The Trust

was set up in memory of 4-year-old Grace Kelly who passed away in 2014 from a rare form of childhood cancer. We fund research into rare and aggressive childhood cancers, work to educate families and clinicians about the signs and symptoms of childhood cancer and produce information booklets that are written by medics to explain to parents and children about the treatments they are facing. We provide financial, practical, and emotional support to local families through our family support service at the charity, giving families a listening ear at the time when they need it most. For more information visit:

[www.gkcct.org](http://www.gkcct.org)

*Because the children of today all deserve a tomorrow.*

## Great Ormond Street Hospital Children's Charity



Great Ormond Street Hospital Children's Charity (GOSH Charity) is the UK's largest charity dedicated to

funding paediatric research. GOSH Charity funds in multiple key areas: education, technology and innovation, patients and families, staff, environment (including major redevelopment), and ground-breaking research into child health. Through the charity's research strategy, we fund research investing in our four main priority areas – (1) Increase understanding of the origins and biology of disease, (2) Advance targeted treatments, cures and new interventions through discovery research, (3) Improve the everyday experience of children living with a rare and complex disease, and (4) Optimising research opportunities with world-class infrastructure. We fund research across the UK in order to transform the lives of children with rare or complex health needs by driving improved outcomes.

## Guts UK



Guts UK is the charity for the digestive system funding research from 'top to tail'; the gut, liver and pancreas. People are suffering. People are dying.

All because of a lack of knowledge about our guts. Guts UK charity exists to change that. With new knowledge, we will end the pain and suffering for the millions affected by digestive diseases. Guts UK's research leads to earlier diagnoses, kinder treatments and ultimately, a cure. Guts UK's vision is of a world where digestive disorders are better understood, better treated and everyone who lives with one gets the support they need.

## Healthcare Infection Society



The Healthcare Infection Society (HIS) is a UK registered charity (1158172). The objectives

of HIS are to advance knowledge, foster scientific interest and disseminate information about the prevention and control of healthcare-associated infections (HCAIs). We have over 1,300 members who are experts in the prevention and control of HCAIs. Our members are drawn largely from the medical profession and are predominantly consultant microbiologists and doctors enrolled on an infection specialty training programme. Nurses, clinical scientists, research scientists and others with a demonstrable professional interest in HCAIs are also a vital part of our membership network.

HIS helps to prevent HCAIs by:

- sharing research, evidence, and best practice
- providing a source of expertise in the prevention and control of HCAI
- supporting everyone in UK healthcare and around the world to reduce avoidable HCAIs
- striving to inspire and support generations of healthcare infection professionals through training, education and collaboration

- supporting and communicating pioneering world leading research, driving effective practice

Supporting research in the field of infection prevention and control (IPC) in healthcare has been a key HIS activity since 1986, when the first scholarships to support visits to overseas laboratories and organisations were awarded. Since then, HIS has maintained a designated fund to support a variety of research and funding.

The level of funding is decided by HIS Council and may vary from year to year depending on the quality of applications received and the overall financial position of the Society. Currently, all grants are restricted to research undertaken in UK and Ireland.

We have regularly awarded grants of up to £100,000 for major research projects and we are proud of our contribution to both the development of evidence in the field of infection prevention, and the support of the professional development of our members. Supporting research in the field of infection prevention and control in healthcare is a vital HIS activity. To encourage a diverse range of research, we offer funding for small scale research and pilot projects, major research projects and fellowships for healthcare professionals. We also offer funding to support the professional development of our members, as well as grants to support public engagement events and events organised by, or for, healthcare professionals.

Further information about the funding available from HIS can be found using this link:

<https://his.org.uk/funding-awards/>

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## Heart Research UK



For over 50 years, Heart Research UK has funded pioneering and ground-breaking research projects

in hospitals and universities across the UK to help treat, prevent and cure heart diseases. The Charity was founded to help make surgery safer and funded six of the first eight successful UK heart transplants. Heart Research UK also offers grants to community groups for projects that actively promote heart health and healthy lifestyles. In addition, the Charity helps educate health professionals

with unique masterclasses, and invests in experts of the future by funding scholarships, fellowships and PhD studentships. Until there are no more deaths from heart diseases.

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## Institute of Alcohol Studies



The Institute of Alcohol Studies is an independent body bringing together evidence, policy and

practice from home and abroad to promote an informed debate on alcohol's impact on society. Our purpose is to advance the use of the best available evidence in public policy decisions on alcohol.

The IAS Strategy 2020–2023 is available here. One of the main initiatives detailed in the strategy was the launch of a Small Grants Scheme (up to £10,000) intended to support novel research initiatives in the alcohol field, particularly proposals from early career researchers.

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## JDRF



JDRF is the type 1 diabetes charity, improving the lives of people with type 1 diabetes by driving research

to cure, treat and prevent type 1 diabetes and its complications.

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## Kidney Research UK



As the leading kidney research charity in the UK, nothing is going to stop us in our urgent mission to end kidney disease. We're here to be heard, to make a difference, to change the future. This is a

disease that ruins and destroys lives. It must be stopped. Our vision is the day when everyone lives free from kidney disease.

Over the past 60 years, our research has made an impact. But kidney failure is rising, as are the factors contributing to it, such as diabetes and obesity. Today, we are more essential than ever.

There are around 3.5 million people living with kidney disease in the UK, treatments can be gruelling and currently there is no cure. Only research will end this by offering kidney patients and their families hope for the future.

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### Leeds Hospitals Charity



Leeds Hospitals Charity is partner charity to Leeds Teaching Hospitals NHS Trust. As one of the biggest

healthcare trusts in Europe, these seven specialist hospitals sit at the heart of the city of Leeds, providing healthcare services for more than a million people each year. Our charity's mission is to support Leeds Teaching Hospitals in their aim to deliver the best care to patients and their families. We do this by working together with patients and their families, donors, fundraisers, volunteers, local businesses and other charities in order to raise additional funding. Funding is delivered through our six priority areas: Equipment, Research, Education, Health & Wellbeing, Environment and Specialist Staff.

Over the next five years we will invest more in the areas where we can have a greater impact, from supporting the latest in healthcare innovation to helping to reducing health inequalities across the city of Leeds. Our ambition to significantly grow is driven by the growing needs and ambition of Leeds Teaching Hospitals. Every member of staff, across all our hospitals, strives to deliver the best patient experience and relies on their charity to fund things over and above what the NHS can pay for.

Evidence shows that research active hospitals deliver better patient care. Through our funding we want to increase opportunities to: enable patient participation in the design and development of studies; increase access to trials; create and foster a research environment that supports diversity, discovery, growth and innovation and develops a talent pipeline.

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### Leukaemia & Lymphoma NI



Leukaemia & Lymphoma raises funds for blood cancer research. We operate with the main objective of improving survival rates for blood cancers by supporting the

scientists and students researching these diseases in Northern Ireland. We currently fund researchers in the blood cancer research group based at the Centre for Cancer Research and Cell Biology (CCRCB) at Queen's University Belfast, who are working on projects to identify, target and eliminate the abnormalities that cause blood cancer. The impact of their research is changing lives both locally and globally.

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### Leukaemia UK



Leukaemia UK is the UK's dedicated leukaemia research charity, committed to saving and improving the

lives of those affected by leukaemia, by funding world-class research and ground-breaking care. Over the next 5 years we plan to expand our research programme with new funding streams, including investing further in the leukaemia research leaders of today and tomorrow, project grants to tackle the big questions, collaboration grants to go further, faster – and applied research, to ensure breakthroughs reach patients sooner.

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### Lister Institute of Preventive Medicine



The Lister Institute's competitive, prestigious and significant research prizes give young

scientists the opportunity to develop their potential through flexible funding over a five-year period. They also become part of the very supportive Lister community of current and former fellows. The awards are aimed at younger researchers in the early years of running their own groups, for whom receipt of the prize would make a significant difference to their research work and their careers.

## Macular Society



Macular disease is the biggest cause of sight loss in the UK, with around 300 people diagnosed every day.

The Macular Society is the only charity determined to beat the fear and isolation of macular disease with world class research, and the best advice and support.

To support people affected by macular disease now, the Macular Society provides a range of support, information and services. Our research programme is focused on finding new treatments and a cure to Beat Macular Disease forever.”

## Marie Curie



Marie Curie is the UK's leading end of life charity. The charity provides essential frontline nursing and hospice care for people with any terminal illness, a free support line and a wealth of information and

support on all aspects of dying, death and bereavement. Marie Curie is committed to sharing its expertise to improve quality of care and ensuring that everyone has a good end of life experience.

Marie Curie's [research, policy and public affairs strategy](#) aims to achieve impact on policy and practice and focuses on four thematic themes:

- to provide quality care and support for the mental and physical health, and wellbeing of people affected by death, dying and bereavement
- to end financial insecurity at end of life and ensure that everyone has the support they need to address their practical concerns
- to ensure that everyone affected by death and dying – including the family, friends and carers of the dying person - are supported through and beyond the end of life
- to end inequity in end of life experience by ensuring access to excellent standards of care and support for all

Marie Curie is the largest charitable funder of palliative and end of life care research in the UK [UKCRC, 2020], funding and supporting research in the following ways in 2022:

- the open and competitive **Marie Curie Research Grants Scheme** funds research to improve care and support for people living with a terminal illness and their families, carers and friends
- **Marie Curie's Research Centres** are based at University College London and Cardiff University, receiving Core/Programme Grant funding from Marie Curie, as well as funding from other sources
- the **Marie Curie Research Fellowship Scheme** aims to increase research capacity in palliative and end of life care, supporting future leaders in the area and facilitating research activity in local Marie Curie hospices. Current Fellows are based at universities in Belfast, Leeds, Edinburgh, and Warwick
- the **Marie Curie Internal Small Research Grants Scheme** supports staff to become more research active as well as addressing research questions arising from Marie Curie service and policy activities
- the **Annual Marie Curie Palliative Care Research Conference** brings together thought leaders and key professionals from across research, policy and health and social care to share and learn from the latest research and evidence in palliative and end of life care. The conference is free and open to all and since 2020 has been conducted online\*
- the **Marie Curie Research Impact Fund Scheme** provides support for well-planned, high quality, targeted activities that can facilitate the uptake of existing palliative and end of life care research into practice or policy
- Marie Curie commissions research to address specific and time-sensitive questions of relevance to Marie Curie's strategic research and policy themes. As with all Marie Curie-funded research, commissioned research undergoes peer review

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## Medical Research Foundation



The Medical Research Foundation is the charitable foundation of the Medical Research Council (MRC) –

now part of UK Research and Innovation - and has been accepting charitable donations since 1919.

Our vision is to advance medical research, improve human health and change people's lives. We invest directly in medical research – donations are never spent on campaigning, advocacy, or patient support services, simply on research to improve health.

Our longstanding connection with the MRC means that we have access to some of the best medical knowledge in the world. That, along with careful governance, ensures we make an impact where it is most needed.

Unlike many medical and health charities, we do not have to provide support for a particular disease or condition, or a particular research institution. We are free to choose our own research priorities so are responsive and flexible in the way we allocate funding.

We identify research priorities according to gaps in understanding, or specific donor priorities. Currently, these priorities include research into eating disorders and self-harm; pain; the impact of climate change on health; child and adolescent skin disorders; and antimicrobial resistance.

For more information, visit:

[www.medicalresearchfoundation.org.uk](http://www.medicalresearchfoundation.org.uk)

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## Medical Research Scotland



Medical Research Scotland is an independent medical research charity which provides funding for

research which aims to improve the diagnosis, treatment or prevention of any disease; to understand basic disease processes; or to develop medical technology. We do this through our undergraduate Vacation Scholarships, PhD Studentships and Medical Research Scotland-sponsored Daphne Jackson Fellowships which support and encourage

early stage scientists to develop and establish successful research careers. We are not restricted to funding research into any one disease or condition and the research we fund takes place in Scotland.

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## Meningitis Now



Meningitis Now is the founder of the meningitis movement and one of the leading charities dedicated to fighting meningitis in the UK.

With over 35 years' experience, the charity is a powerful and united voice for people affected this disease. The charity funds high quality research, which aims to assist the charity to deliver its two over-riding goals: (1) Saving lives and preventing disability through improving prevention, early diagnosis and treatment; (2) Rebuilding futures and improving quality of life through increased recognition of the impact of meningitis and provision of timely, effective support.

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## Meningitis Research Foundation



Meningitis Research Foundation (MRF) is a charity that brings together people and expertise to achieve a vision of a world free from

meningitis and septicaemia. They bring this vision closer through funding research of the highest scientific merit, in terms of the importance of the investigation, excellence of the study, ability of the research team, and probability of success. MRF aims to promote early recognition and diagnosis of these infections and to help improve treatment. They also aim to raise awareness among the public and to provide ongoing support to affected individuals and their families, both in times of crisis and as they live with the after effects of the diseases.

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## Mesothelioma UK



Mesothelioma UK is the only national UK charity dedicated to mesothelioma. We exist to support people with mesothelioma to live better and live longer and to prevent mesothelioma happening to future generations. We will do this by advocating for better treatment and care, enhancing quality of life, supporting research and amplifying the patient's voice.

The focus of our charitable activity since our foundation has been to provide access to specialist nurses at the point of need, in local hospitals across the UK. Mesothelioma Clinical Nurse Specialists provide a large range of benefits including specialist expertise available to patients, increased access to clinical trials, an increase in the number of patients accessing treatment, a lower rate of unplanned admissions, better management of symptoms and an overall increase in the quality of life for patients.

At Mesothelioma UK, we also provide a number of other services to support anyone affected by mesothelioma. These include a Freephone Support Line, two specialist benefits advisors, a travel grant to support the cost of accessing clinical trials and a comprehensive information service accredited by the Patient Information Forum. We also offer a range of grant opportunities that will fund research and explore patients' experiences of care and fund a dedicated research centre at Sheffield University.

We understand that people diagnosed with mesothelioma feel very strongly about preventing future cases. That is why we work closely with partner organisations to raise awareness of asbestos and to shine a light on the devastating impact of mesothelioma.

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## MND Association



The Motor Neurone Disease Association is the leading national charity in England, Wales and Northern Ireland focused on improving access to care, research and campaigning for MND. We are a membership organisation with over 10,000 members, forming a powerful national and local network that provides information and support alongside fighting for improved services.

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## MND Scotland



MND Scotland's vision is of a world without Motor Neuron Disease (MND) and to make time count for everyone affected by MND in Scotland. As well as providing support services for people living with MND in Scotland, we fund research across the UK to improve care for people affected by MND, identify disease-modifying treatments and understand the biology of these diseases. We are a major funder of MND-SMART, a ground-breaking and first of its kind national clinical trial. MND Scotland are dedicated to improving the lives of people affected by MND and strive to include the MND community in research by facilitating participation in clinical trials, supporting involvement in research design and funding research that addresses key issues in the lives of people affected by MND.

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## Moorfields Eye Charity



Moorfields Eye Charity is the main fundraising and grant-making charity for Moorfields Eye Hospital and the UCL Institute of Ophthalmology. The charity provides targeted funds, above and beyond the responsibility of the NHS, to research cures and find treatments for patients and millions of people affected by eye disease in the UK and around the world.

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## MQ: Mental Health Research



MQ Mental Health Research is a global mental health research charity that launches research exploring the detection, treatment, and prevention of mental illness.

Our vision is simple: to create a world where mental illnesses are understood, effectively treated, and ultimately prevented. Since 2013, we have awarded over £9.7 million to mental health projects across the different scientific disciplines and covering multiple conditions. Find out more at [www.mqmentalhealth.org](http://www.mqmentalhealth.org)

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## MS Society



We're the MS Society – a community of people living with MS, scientists, campaigners, volunteers and

fundraisers. We understand what life's like with MS, and we support each other through the highs, lows and everything in between. And we're driving research into more – and better – treatments. For everyone. Together, we are strong enough to stop MS.

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## Multiple System Atrophy Trust



The MSA Trust is dedicated to supporting people with the rare progressive neurological condition

Multiple System Atrophy. There is currently no cure and we do not yet know the cause of MSA, which makes research into this rare and complex disease absolutely essential. MSA Trust will announce another call for research programmes in Autumn 2023 and will continue to develop its research strategy to respond to the development of studies into disease modifying treatments.

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## Muscular Dystrophy UK



Muscular Dystrophy UK is the leading charity for over 110,000 people in the UK living with one of over 60

muscle wasting and weakening conditions. We share expert advice and support so people can live well; fund groundbreaking research to better understand the different conditions and to lead to new treatments; work with the NHS towards universal access to specialist health; and campaign for people's rights, better understanding, accessibility, and access to treatments.

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## Myeloma UK



Myeloma UK is the only charity in the UK that focuses on the incurable blood cancer myeloma and

its related conditions. We are here to provide information and support to anyone affected by the incurable blood cancer, myeloma. We invest in research that helps us understand how myeloma develops and progresses, and we do this to help everyone working in myeloma better understand and meet the needs of myeloma patients and help deliver change.

We do this because we want to see a better tomorrow for patients. We represent the voices of people affected by myeloma to government, the NHS and the wider healthcare sector to improve access to the latest treatments, remove barriers to prompt diagnosis, and improve the design and delivery of care.

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## Myrovlytis Trust



More than 7000 rare diseases have been described, affecting 300 million people globally. It

takes, on average, over 4 years for an individual to receive a diagnosis, and even then, only 400 of these diseases have an approved treatment.

The Myrovlytis Trust is a charity founded in 2007. By providing information and support to patients, raising awareness among clinicians and the public and strategically funding research, the Myrovlytis Trust aims to transform the outlook for rare diseases. With an initial focus on two conditions (Birt-Hogg-Dubé Syndrome and osteosarcoma), we fund research directed towards new treatments. We want to ensure that these patients gain access to the same state-of-the-art technologies, breakthroughs, and therapies as those with more common disease. We passionately believe that no one should be disadvantaged because they have a rare disease.

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## Neuroblastoma UK

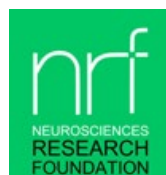


We are dedicated to finding a cure for neuroblastoma. For over 40 years, our charity

has funded research to help improve treatment for all children with neuroblastoma and help save more young lives. At Neuroblastoma UK, we fund impactful pre-clinical laboratory research to advance our understanding of neuroblastoma, accelerate drug development and make breakthroughs in treatment. Since 1982, we have invested nearly £9 million into neuroblastoma research, awarded more than 85 grants and supported projects across 19 research institutions in the UK, many with wider international participation. Yet, despite our very best efforts, research into neuroblastoma remains critically under-funded in the UK. Only around 2% of cancer research funding in the UK is spent on childhood and young adult cancers. This must change. Together, we can give children with neuroblastoma the future they deserve.

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## Neurosciences Research Foundation



Our Aim: To help provide funding for research into the diagnosis and treatment of neurosurgical conditions predominantly at St George's Hospital NHS Foundation Trust and St George's, University of London.

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## North West Cancer Research



North West Cancer Research are an independent charity dedicated to putting our region's cancer needs first.

Since 1948, we have been funding pioneering research to tackle the cause, improve the care and find the cure for cancer. Residents in the North West of England and North Wales remain significantly more likely to be diagnosed with cancer than the rest of the UK.

Our focus is on improving cancer outcomes for people in our region and creating a cancer-free future. Through our research, awareness and health promotion work, we want to reduce the incidence of cancer, understand what causes the raised levels of cancer incidence and through research, work to improve the diagnosis of this condition. We will work towards improving the treatments of and the care for people with cancer. Our goal is that through our work, deaths through cancer are reduced in our region.



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## Northern Ireland Chest, Heart and Stroke



Northern Ireland Chest Heart & Stroke is a local charity which helps people living with these conditions and their families. Each year we need to raise over £3m to fund our

range of programmes, community services and research in the hospitals and universities of Northern Ireland.

Our vision for Northern Ireland is one where everyone can live life to the full, free from chest, heart and stroke illnesses. To achieve this, our work is focused in these areas: Care Services, Prevention, Health Promotion, Research, Lobbying and Policy Work. All our work is within Northern Ireland. When people donate to NICHHS, they know their entire gift will be used for local benefit.

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## Oracle Cancer Trust



Oracle Cancer Trust is the leading Head and Neck cancer charity in the UK, and our vision is to ensure everyone has the best chance of surviving Head

and Neck cancers across the UK. We do this by enabling greater understanding, knowledge and awareness of Head and Neck Cancers.

Our 5-year vision is that by 2027:

- head and neck cancers and their symptoms will be more widely recognised
- the rates of late-stage diagnoses will show signs of levelling off and all key stakeholders will have a common plan we are collaboratively working towards
- we will have better data and will have made some visible progress in addressing the inequalities within Head and Neck cancers
- there will be more consistent and visible support for patients and their caregivers pre, during and post treatment

- there will be recognised resources and opportunities for knowledge and experience sharing to improve treatment options and quality of life outcomes for Head and Neck cancer patients

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## Orthopaedic Research UK



Orthopaedic Research UK is a medical charity dedicated to advancing knowledge and reducing the burden of poor musculoskeletal health on

individuals, workplaces and our health system by investing in breakthrough research, education programmes and innovation in bone, joint and muscle wellbeing.

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## Ovarian Cancer Action



Ovarian Cancer Action is the UK's ovarian cancer research charity.

Scientific research is how

we make the biggest impact on the UK's most deadly gynaecological disease. We're committed to funding research to accelerate progress in three main areas: prevention, diagnosis and treatment. And while our scientists are busy in the lab, we're on the ground campaigning for change and raising [awareness of the disease](#), so that every woman and healthcare professional knows the signs to look out for.

## Pancreatic Cancer UK



Pancreatic cancer is a tough one but we're taking it on. It is tough to diagnose, tough to treat, and tough to research.

It's unacceptable that more than

half of people diagnosed with pancreatic cancer die within 3 months. Survival rates have improved enormously for most cancers. But sadly, for pancreatic cancer, this is not the case.

But there is hope. Our nurses are here to support people affected by pancreatic cancer now, we're campaigning for change and funding research to detect early, treat better and transform care. Together we'll transform the future of pancreatic cancer.

## Parkinson's UK



**What we do** - Together we will find a cure and improve life for the Parkinson's community. We're close to

major breakthroughs. Funding the right research into the most promising treatments, we get closer to a cure every day. Until then, we're here for everyone affected by Parkinson's. Fighting for fair treatment and better services.

People with Parkinson's, scientists and supporters, fundraisers and families, carers and clinicians, all working side by side. Impatient for change, we're taking a stand, speaking out, chipping in, and playing our part.

**Our mission** - We're a people-powered movement on the verge of major breakthroughs in Parkinson's. Together, we will find a cure. We help people to live as well as possible. And make sure everyone understands the real impact of Parkinson's.

**Our values** -

- people-first: we're a strong movement for change, informed, shaped and powered by people affected by Parkinson's. We value and support each other
- uniting: we're people with Parkinson's, scientists and supporters, fundraisers and families, carers and clinicians. We're working, side by side, to

improve the lives of everyone affected by Parkinson's

- pioneering: we innovate across everything we do. Creative, courageous and with pioneering spirit, we strive to continually improve
- driven: we live and breathe our purpose. We set clear goals and strive to deliver the greatest impact for everyone affected by Parkinson's

## Pharmacy Research UK



Supporting the production of timely evidence that informs policy and practice relating to pharmacy's contribution

to the health of the public, medicines and their use.

## Prostate Cancer Research



Prostate Cancer Research (PCR) are a research charity focused on delivering breakthrough medicines and treatments for prostate

cancer, particularly the advanced stages of the disease. They use their deep understanding of both patient priorities and the research ecosystem to direct their funding where it will have the most impact. Over the past four years, they have more than quintupled the amount of their research, and currently fund a breadth of research into topics such as AI, radiotherapy, hormone therapy and novel drug targets in multiple institutions across the UK and in the US.

The dedicated Patient Projects team focus on ensuring that the patient voice is central to all that PCR do and that patients input directly into all of their operations. Their work informs, educates and empowers patients and their major new initiative is the infopool, launching March 2023, which provides patients with the information they need to help them become a joint partner in the decision making about what treatment they will have.

Proven Connect is PCR's newly established translational arm, focused on co-investing in promising biotech companies, along with venture capital funders and impact investors. Proven Connect aims to ensure that less products fall down

the wide gulf between the lab bench and the patient by connecting early stage biotechs to the resources and the expertise they need to succeed. More information can be found at <https://www.provenconnect.com>

For more information, please visit: [www.pcr.org.uk](http://www.pcr.org.uk)

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### PCS Support



PSC Support is the only UK patient organisation dedicated to improving the lives of people affected by the rare liver disease,

primary sclerosing cholangitis (PSC). We provide patients and families with high-quality, accessible information and the support they need; we collaborate with healthcare providers to improve clinical care; we shape and fund critical research so that we can live in a world without PSC. There is currently no known curative treatment, or treatment that is known to slow the progression of PSC.

Our research priorities are the search for a curative treatment, treatment which slows the progression of PSC and treatment that alleviates the symptoms and psychological effects of PSC and improves PSC patients' quality of life. Thus we directly fund individuals and teams proposing.

1) Research projects to:

- establish and develop biobanking and bio-markers
- better understand prevalence/epidemiology, aetiology and identification of subpopulations of PSC patients, and outcomes including liver transplantation
- develop and improve treatments
- support clinical trials in PSC

And 2) Social research to investigate:

- quality of life
- survivorship
- transition to adult services
- compliance and adherence

The frequency and value of funds available for research is determined each financial year based on available funds. We increase the impact of our funding by:

- encouraging projects that link into other funding streams and national research priorities
- supporting pilot studies, funding equipment (but not IT equipment), and funding social and nursing research
- co-funding with other organisations where possible (such as LifeArc)

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### Prostate Cancer UK



Prostate Cancer UK has a simple ambition – to save and enrich the lives of men with prostate cancer. Investing in finding better treatments and tests that

could save thousands of lives. Working with the NHS to make sure men get access to breakthrough tests and treatments. Spreading the word about who is at risk of prostate cancer, especially to those at higher risk. Supporting people dealing with prostate cancer and providing health information.

Visit [www.prostatecanceruk.org](http://www.prostatecanceruk.org) now to help beat this disease.

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## Psoriasis Association



The Psoriasis Association was founded in 1968 by Dr Dick Coles – a Consultant Dermatologist at

Northampton General Hospital. Dr Coles was keen to enable people with psoriasis to come together to talk about the condition, and so from the initial group he set up in Northampton, a network of groups around the country were formed. The primary aim of the groups was to offer mutual support, but fundraising, initially for the Research fund, also took place. Since our foundation in 1968, we have awarded millions of pounds in research grants.

Through our work, we help people whose lives are affected by psoriasis and psoriatic arthritis, providing information, raising awareness and supporting research. We are the leading national charity and membership organisation for people affected by psoriasis in the UK.

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## Retina UK



Retina UK is the only UK-based charity dedicated solely to working for people affected by inherited retinal conditions that cause progressive sight loss.

We support people affected by inherited sight loss to lead better lives today, and fund medical research to accelerate the search for treatments for the future.

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## Royal Hospital for Neuro-disability



Founded in 1854, we are a well-respected national charitable hospital and research

centre, providing services for adults with brain injuries. Our Putney based community provides specialist care, therapies and innovative technology to meet the complex needs of people with profound disabilities.

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## Royal National Institute for Deaf People



RNID are the national charity supporting the 12 million people in the UK who are

deaf, have hearing loss or tinnitus. They're working to end the discrimination faced by their communities, help people hear better now and fund world-class research to restore hearing and silence tinnitus.

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## Royal Osteoporosis Society



The Royal Osteoporosis Society (ROS) is the UK's largest national charity dedicated to improving bone

health and beating osteoporosis. The ROS is here for everyone. The charity equips people with practical information and support to take action on their bone health. Working with healthcare professionals and policy-makers, the ROS is influencing and shaping policy and practice at every level, whilst also driving the research and development of new treatments, to beat osteoporosis together.

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## Sarcoma UK



Sarcoma UK is a national charity that funds vital research, offers support for anyone affected by sarcoma

cancer and campaigns for better treatments. It is the only cancer charity in the UK focusing on all types of sarcoma.

## Scleroderma & Raynaud's UK



Scleroderma and Raynaud's UK is the only UK charity solely dedicated to improving the lives of people

living with Scleroderma and Raynaud's Phenomenon. Scleroderma is a rare, complex multi-system disease with Raynaud's often being a first presenting symptom. The condition affects 19,000 people in the UK, and 2.5 million worldwide. For many people Scleroderma is life threatening, but it seriously impacts quality of life for everyone.

Our vision is a world where no-one has their life limited by Scleroderma and Raynaud's, and our mission is to improve the lives of everyone affected by the conditions. We aim to achieve this by investing in research, improving awareness and understanding of the conditions, and providing information and support to all those affected.

SRUK provides funding to support research connected to the four core themes identified within our research strategy: precision medicine, early detection, quality of life, and the causes of scleroderma and Raynaud's. We fund a number of projects and initiatives in partnership with other organisations and have MOUs in place with other funders. This has enabled SRUK to partner with organisations such as the Medical Research Council to launch new initiatives like the SRUK-MRC Jointly Funded Clinical Research Training Fellowship.

Since the formation of SRUK in 2016, we have invested over £12 million to support research related to Scleroderma and Raynaud's, and currently have 14 active research grants.

## Scoliosis Association UK



As of 1st January 2023, Scoliosis Association UK (SAUK) and the British Scoliosis Research

Foundation (BSRF) have merged, and will continue to promote and fund high-quality research into scoliosis and other spinal conditions in the UK, whilst also continuing to work to raise awareness of scoliosis and provide support, advice and information to people affected by scoliosis in the UK.

## Sight Research UK



Sight Research UK has a sole purpose: to beat sight loss faster. We raise funds to invest in world-class

research that is poised to find better solutions for people with sight-threatening and blinding conditions – be it in diagnosis, prevention or treatment. Over the past 37 years, we have invested nearly £18 million to find new treatments, or prevention options, for eye diseases in adults and children.

As a community of supporters, researchers, patients, healthcare professionals, and fundraisers, we are working towards a world where no one has to face sight loss or blindness.

## Sir Jules Thorn Charitable Trust



The Sir Jules Thorn Charitable Trust funds translational research in UK universities and NHS

organisations. The Trust does not focus on any one discipline or disease area but looks to support work that will accelerate the translation of outstanding research into improved clinical outcomes for patients. The Trust also supports capital investment in laboratories or other facilities that support translational research. Beyond research, we support charities and NHS organisations working to improve services for people living with serious long-term or life-limiting conditions.

## Solving Kids' Cancer



Solving Kids' Cancer provides specialist support to children and families affected by neuroblastoma.

They help equip parents with the information and resources they need to fight the disease and feel empowered to make informed choices about their child's treatment. They help families raise funds to access treatment and trials abroad while working hard to improve options in the UK, so families don't have to travel overseas. Solving Kids' Cancer is shaping and funding ground-breaking research to improve survival rates for children with neuroblastoma.

## Spinal Research



Spinal Research is the major UK charity funding research on an international scale to find treatments for paralysis caused by spinal cord injury.

We came into existence in 1980 because of the vision and obstinacy of our founder, Stewart Yesner, a young, paralysed man who refused to accept that there would never be a treatment for people in wheelchairs. His faith, and that of our supporters, has brought us to the stage where it is now accepted by the medical profession that an effective treatment for paralysis will become a reality. We exist to beat paralysis and believe in the future, where an injury to the spinal cord no longer means a life sentence.

## Stoke Mandeville Spinal Research



Stoke Mandeville Spinal Research (SMSR) is a charity that funds research into the complications of Spinal Cord Injury (SCI). Over 50,000

people in the UK are living with SCI, most of whom suffer complications that seriously affect their quality of life. Our Research Grants Programme supports projects with the potential to help people achieve greater independence, enabling them to engage more freely in education, work, hobbies and family life.

We support the development of new treatments and therapies, and deepen our understanding of the issues that affect people with SCI on a daily basis, such as:

- pressure ulcers
- neuropathic (nerve) pain
- urinary tract infections
- assistive technology for upper limb function

Projects are selected through a robust peer review process by our Scientific Advisory Board. As well as being chosen for their scientific merit, they are chosen for their potential to make real changes to clinical practice and therefore a person's quality of life.

## Stroke Association



We are the Stroke Association. We believe in life after stroke. That's why we support stroke survivors

to make the best recovery they can. It's why we campaign for better stroke care. And it's why we fund research to develop new treatments and ways of preventing stroke. We rely on your support to change the lives of people affected by stroke and reduce the number of people who are struck by this devastating condition. Please help us to make a difference today.

## Target Ovarian Cancer



At Target Ovarian Cancer, we target what's important to stop ovarian cancer devastating lives. We work to improve

early diagnosis, give information and support, and fund urgently needed research to find new, more targeted treatments. We're helping everyone affected by ovarian cancer live better lives today – and have hope for the future.

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## Tenovus Cancer Care



Tenovus Cancer Care gives help, hope, and a voice to everyone affected by cancer. Its wide range of services

offers information, advice, and specialist support to people living with cancer, and their loved ones.

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## The Brain Tumour Charity



The Brain Tumour Charity is at the forefront of the fight to defeat brain tumours, making a difference every day to the lives of people

with a brain tumour and their families. We fund pioneering research to increase survival, raise awareness of the symptoms and effects of brain tumours and provide support for everyone affected to improve quality of life. We are committed to having the greatest possible impact for every person affected by a brain tumour, so that getting the diagnosis of a brain tumour no longer means a death sentence.

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## The Encephalitis Society



The Encephalitis Society provides support and information for people worldwide affected by

encephalitis (inflammation of the brain), their families/carers and professionals involved in their care; raises global awareness of encephalitis; provides education and networking opportunities for medical and healthcare professionals; collaborates with other institutions (hospitals, universities and research institutions) and funds research into the condition. The Encephalitis Society's research portfolio includes seed funding grants, PhDs, fellowships, research exchange projects across the UK and overseas.

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## The Kennedy Trust for Rheumatology Research



The Kennedy Trust's mission is to provide financial and other support for basic and translational research into musculoskeletal and related inflammatory diseases. The Trust focuses on unmet needs, with the longer-term

objective of its resources helping to achieve a meaningful impact in the development of cures and preventative treatment. In addition to providing ongoing support for the Kennedy Institute in Oxford, the Trust has also established a number of independent initiatives, including a £2.5m Senior Research Fellowship programme and a national MB PhD scheme.

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## The Lewy Body Society



The Lewy Body Society was founded in 2006 to support research into Lewy

body dementia and to raise awareness of the disease. We aim to educate the public, the medical professions and those in decision-making positions about the disease, which unfortunately is still not well known.

Thanks to the donations we receive we have been able to fund research projects totalling £2.2 million to date. The first research we funded was in 2007 with a PhD studentship at Newcastle University and we have since sponsored a further 22 projects. Through these studies, researchers have made significant strides forward in identifying the causes of Lewy body dementia and ways in which the disease might be more effectively identified and treated.

## The Little Princess Trust



The Little Princess Trust gives Hair and Hope to children and young people by providing wigs and funding vital research into childhood cancers.

Since 2016, the charity has given more than £20 million to over 100 research projects focused on finding kinder and more effective treatments for all paediatric cancers.

The Little Princess Trust's funding is driven by improving patient outcomes, identifying unmet needs, and answering unanswered questions.

Innovation is encouraged and championed, whilst the charity has no bias towards any specific cancer type, The Little Princess Trust strongly believes that every child matters and each deserves the best chance of survival.

## The Lullaby Trust



The Lullaby Trust raises awareness of sudden infant death syndrome (SIDS), provides expert advice on safer sleep for babies and offers emotional support for bereaved families.

## The Migraine Trust



The Migraine Trust is the UK's lead migraine charity. Migraine affects 10m people in the UK, that's greater than

the number of people living with diabetes, asthma, and epilepsy combined, and each day there are 190,000 migraine attacks. As well as funding research we urge other bodies to increase their investment as migraine is the least publicly funded of all neurological illnesses relative to its economic impact. We also campaign campaign better care and treatments, seek to improve awareness and education about this complex brain disorder and are there for those living with migraine through our information and support services. We are determined that our vision of a world where migraine doesn't stop anyone from living the life they want, becomes a reality.

## The Royal College of Anaesthetists



The [Royal College of Anaesthetists \(RCoA\)](#) is the professional body

responsible for the specialty of anaesthesia throughout the United Kingdom. Its principal responsibility is to ensure the quality of patient care through the maintenance of standards in anaesthesia, pain medicine and intensive care. The RCoA supports the development of high-quality research within the healthcare profession and works collaboratively, through the [National Institute of Academic Anaesthesia \(NIAA\)](#), to enhance high quality research activity by funding research that aims to improve patient care and by supporting and promoting academic research in anaesthesia at all levels.

The NIAA was established in 2008 by the Royal College of Anaesthetists, the Association of Anaesthetists of Great Britain and Ireland and the journals Anaesthesia and the British Journal of Anaesthesia. It is a uniquely collaborative umbrella organisation that incorporates these four bodies, plus several anaesthetic specialist society funding partners, to improve patient care by supporting and promoting research in anaesthesia via biannual grant distribution rounds, to which all NIAA partners make contributions at different times.

The [Health Services Research Centre \(HSRC\)](#) was launched in 2011 as an offshoot of the NIAA, with the aim of being a hub for world-class anaesthesia research (including perioperative, pain related and sub-specialty research). The HSRC is now the operational delivery arm for all the health services research conducted by the RCoA, including such projects as the National Emergency Laparotomy Audit (NELA), the Perioperative Quality Improvement Programme (PQIP), the Sprint National Anaesthesia Projects (SNAPs) and the RCoA National Audit Projects (NAPs).

The HSRC's projects are direct health services research, focusing on patients undergoing anaesthesia and surgery and their broader perioperative pathway. This broadens our reach beyond just the surgical episode itself, to include health outcomes from many months or even years later. This data is captured through a variety of methods including directly reported patient outcomes and statistical analysis and comparison via linkage to national datasets such as ONS and HES.



## The Scar Free Foundation



The mission of The Scar Free Foundation is to achieve scar free healing within a generation and transform the lives of those affected by disfiguring conditions. The Foundation funds scientific, clinical, and psychological research into wound healing and scarring. In the UK we have made huge advances in medical science – people survive trauma and disease that would once have been fatal. But long-term care and healing have not yet advanced so far or so fast. We are saving people's lives, but we then often consign them to a lifetime of pain and impairment. This must change. That's why the work that The Scar Free Foundation funds is so important - research and innovation are at the heart of medical advances and improved patient care. Scar free healing is an aspiration that will transform the treatment of an enormous range and number of conditions; from trauma, military injury, burns, surgery and complex wounds to internal fibrosis and scar-related diseases of the major organs. The potential economic and health benefits are staggering.

## The Urology Foundation



We are dedicated to beating all urology diseases through cutting-edge research and leading education and training to ensure that fewer lives will be devastated.

## Tommy's



Our work focuses on growing understanding of baby loss, and making improvements in identifying and treating pregnancy complications.

Tommy's fund an innovative research programme through a network of research centres.

## Tuberous Sclerosis Association



The Tuberous Sclerosis Association (TSA) is the only UK charity focused on improving the lives of people affected by rare genetic disorder Tuberous Sclerosis

Complex (TSC). We provide help for today and hope for tomorrow by providing direction or a listening ear through our support and information services for the TSC community through our UK-wide TSA Support Line. We organise events and opportunities across the UK and virtually for those affected by TSC, allowing the TSC community to come together and feel less alone. We fund Funding research into the causes, diagnosis, management and treatment of TSC that has the greatest impact on those affected by the condition and campaign on behalf of the TSC community to ensure that the TSC community has consistent and meaningful access to social support and healthcare provision.

## Wellbeing of Women



Wellbeing of Women are a charity that saves and changes the lives of women, girls and babies. From

period problems and starting a family, to menopause and gynaecological cancers, we are here for women's gynaecological and reproductive health. Each year, millions of women benefit from our research, our campaigns and our health information. With your help, we're tackling the taboos surrounding women's health and striving towards a better future for every woman, girl and baby.

Since 1964, we've invested more than £67 million in research to transform women's health and wellbeing. Many of the tests, treatments and cures we take for granted today started with research that we funded, including the use of ultrasound scanning in pregnancy and the importance of taking folic acid in pregnancy. Our early research helped to discover the link between HPV and cervical cancer, leading to the first preventative school vaccination programme.

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## Wessex Medical Research



Wessex Medical Research funds research to fight disease; to tackle underlying causes of ill health; to find

better treatments and, potentially cures for conditions that affect every age group.

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## World Cancer Research Fund



World Cancer Research Fund examines how diet, weight and physical activity affect your risk of developing and surviving cancer. As part of an

international network of charities, we have been funding life-saving research, influencing global public health policy and educating the public since 1982. While society continues searching for a cure, our prevention and survival work is helping people live longer, happier and healthier lives – free from the devastating effects of cancer.

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## Worldwide Cancer Research



Worldwide Cancer Research aims to end the suffering caused by cancer by starting new cancer cures around the world. We fund

discovery research into all cancers and back the brightest ideas, supporting scientists worldwide to ask big, challenging, new questions about how cancer works. Since 1979, we have invested over £200 million into cancer research in over 30 countries. Our mission is to start the new discoveries that will save millions of lives and realise our vision of no life cut short by cancer.

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## Yorkshire Cancer Research



Yorkshire Cancer Research exists so that more people can live longer healthier lives, free of cancer. We

fund vital cancer research and pioneer innovative new services for people with cancer. These life-giving medical breakthroughs are helping more people survive cancer – here in Yorkshire, and beyond.

## Other charities, foundations and trusts

### African Research Excellence Fund



Our mission is to nurture, mentor, and support a community of post-doctoral researchers across Africa to become research experts and leaders, capable of tackling African and global health challenges.

To maximally address the health issue of Africa, African health research must be led by African researchers. AREF's theory of change identifies the lack of specialist research capabilities and transferrable skills, networks and mentorships that are essential to winning competitive funding for health research scientists to undertake research and progress towards leadership.

We are demonstrating that investing in early career researchers is building research leaders. In the medium term, this is increasing competitiveness for international funding awards, producing high impact publications, and advancing their careers, leadership and influence. Long term, these future research leaders will be shaping national and international health strategy to create more equal and equitable approaches to global health.

Over 500 researchers have participated in one of AREF's programmes:

- AREF Research Development Fellowships: our flagship annual funding competition that provides up to 20 Fellowships per year
  - each high quality, successful applicant receives up to £40k to undertake fellowships at leading research institutions to develop their own research ideas – in an area of scientific research of their choice
  - fellowships include priority groups such as non-anglophone countries, female researchers and are geographically spread
  - provide at least one training/induction session for fellows to improve grant management skills
  - 80% of cohort of Fellows rate AREF support as 'very good' or 'excellent'
- >90% of fellows rate fellowship as have significantly enhanced their career trajectory
- increase the percentage of RDFs awarded to female researchers from 31% to 40%
- increase the percentage of RDFs awarded to non-anglophone countries from 19% to 30%
- AREF Seed Funding Awards: launched in 2022 to enable researchers who have completed an AREF programme to develop their research programmes in Africa
  - we disburse all Seed Funds through an annual competition open to AREF fellows to further their research on completing their fellowships – whether developing pilot data, refining research questions, or adapting and validating data
  - AREF secures funding for 5 to 10 Seed Funds per year offering up to £50k each
- Leadership Programmes: More diversity than ever before in 2022 and our first face to face programmes since pandemic
  - close of Excell-2 Institutional Leadership Programme
  - launched first Towards Leadership programme since pandemic: Totally updated and redesigned as a hybrid programme. (yearlong)
  - New Women's in Leadership Programme (three months)
- Grant Writing Workshop Programme: helps African health researchers improve their skills, knowledge and confidence required to win competitive funding from regional, national, and international funders.
  - this fully online programme is held over eight 3-hour sessions, with a six-week break at the mid-point to allow time for writing of mini proposals

## The Council of Deans of Health



The Council of Deans of Health represents the UK's university faculties

engaged in education and/or research for nursing, midwifery and the allied health professions. At any one time our 104 members will be educating around 200,000 current and future health professionals and will carry out research that improves the population's health and wellbeing. Operating as a multi-professional organisation at the heart of policy and political debate, we aim to lead policy at national and UK level, promoting the essential contribution of our members to health and social care. We are committed to working in partnership, strengthening membership engagement and intelligence gathering to influence policy UK-wide for high quality education and research.

As an organisation that is almost exclusively funded through membership subscriptions, the Council does not fund or commission research externally. The Council does work in collaboration with members though to facilitate externally funded research. Currently, the Council is working with one of its members to research the use of simulated practice learning in nursing education. The research project is mapping the ability of simulation to meet the NMC Future Nurse Standards and investigating how simulated learning can transform practice learning by comparing existing learning approaches with emerging simulated and technology enhanced learning approaches.

The Council also conducts its own research in relation to our policy work. We have also recently published a report on anti-racism in allied health professions education. The report contains 14 case-studies detailing interventions to support minority ethnic Allied Health students throughout their university experience, and provides recommendations on how universities can implement similar schemes. Another recent report captured innovations in practice learning education that occurred during the Covid-19 pandemic. It included a collection of case studies from Council member institutions across the UK to share best practice.

The Council's research policy portfolio focusses strategically on:

- promoting the Council's vision of research in our disciplines and influence to increase capacity and capability
- advocating for an increase in research funding and research career opportunities for our disciplines
- promoting strong research environments in universities' health faculties
- advocating for better career pathways for clinical academics in our professions across the UK

For more information contact: Robyn Cooke, Policy and Research Manager: [robyn.cooke@cod-health.ac.uk](mailto:robyn.cooke@cod-health.ac.uk)

## The Francis Crick Institute



The Francis Crick Institute ('the Crick') is dedicated to understanding the fundamental biology underlying health and disease. Formed in 2015, the Institute is located in a brand

[new state-of-the-art building](#) in central London, which brings together 1500 scientists and support staff working collaboratively across disciplines. This makes the Crick the biggest biomedical research facility under a single roof in Europe.

Our work is helping to understand why disease develops and to translate discoveries into new ways to prevent, diagnose and treat illnesses such as cancer, heart disease, stroke, infections and neurodegenerative diseases. We bring together outstanding scientists from all disciplines, carrying out research that will help improve the health and quality of people's lives, and keep the UK at the forefront of medical innovation.

The Crick is an independent organisation supported by our [funding partners](#); the Medical Research Council (MRC), Cancer Research UK, Wellcome Trust, UCL,

Imperial College London and King's College London. The core contribution for the financial year 2021/22 from our Founders was £107.4m split as follows; MRC £58.8m, Cancer Research UK £38.0m and Wellcome Trust £10.6m.

This core contribution allows the Crick to support a wide range of research programmes led by Group Leaders appointed based on scientific excellence. We have included award data in this analysis contains all programmes supported by the Crick in 2022, as published on UKRI's

Gateway to Research at the time of this analysis. However, the estimated expenditure by programme - £36.2m in 2021/22 – is an estimate based on programme expenditure from 2015/16 to 2018/19, with more recent financial data not yet signed off. While the remainder of the core contribution is included as 'indirect' spend in this analysis, this submission should be considered an incomplete view of the Crick's contribution to health research.

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## The Health Foundation



The Health Foundation is an independent charitable organisation working to build a healthier UK. We are

uniquely placed to address the challenging context and make a real difference to health and care for the long term.

By valuing our health as an asset, investing in health and care services and focusing on the wider factors that shape our health and drive inequalities, we can build a healthier nation. We achieve this by funding research through dedicated programmes and direct commissions in line with our strategic objectives which are:

- improving people's health and reducing inequalities
- supporting radical innovation and improvement in health and care services
- providing evidence and analysis to improve health and care policy

Since the last health research analysis in 2018, we have funded more than 170 projects. This includes funding through our award programmes, which provide funding to support original research to produce knowledge and evidence on what works to improve the quality, accessibility, organisation and sustainability of health and care in the UK. It also includes funding through our improvement programmes, which aim to identify, support and fast-track promising ideas in service design and delivery, bridging the gap between policy and practice, and collaborating with system partners to create the right conditions for change. In addition, we have directly

commissioned projects to support original research and policy analysis across our three priority areas.

We continue to invest in large-scale evaluation of service innovation, including the recently completed evaluation of the NHS partnership with Virginia Mason Institute, an evaluation of the joint Health Foundation and National Voices programme which aims to develop collaborative communities across diverse groups working together to improve health care, and an evaluation of the Adopting Innovation programme, which aims to support local health systems to enable faster and more effective uptake of service innovations and improvements.

We have expanded our work with the social care sector, partnering with the Economic and Social Research Council (ESRC) part of UK Research and Innovation (UKRI), to joint fund IMPACT (Improving Care Together), a new £15m UK centre for implementing evidence in adult social care, led by the University of Birmingham. We also continue our long-term investment in improvement activity in health care through our investment in The Health Improvement Studies (THIS) Institute based at the University of Cambridge, the recent establishment of THIS Labs, and the ongoing investment in Q (delivered by the Health Foundation and supported and co-funded by partners across the UK and Ireland). In 2023, we launched the REAL Centre Research Units, a new £7.25m funded programme to develop a rich evidence base which will build consensus and develop the infrastructure and leadership needed to influence longer-term approaches to policy and funding decisions.

## James Tudor Foundation



The James Tudor Foundation (JTF) is a private charitable grantmaker which supports healthcare charities in the UK. It has a broad remit of “relief of sickness” and awards grants across five funding programmes, one of which is medical research. JTF is open to applications in any area of medical research and, since 2005, it has awarded a total of £4.3m in medical research grants (typically £150k-£200k in new grants a year with grants ranging from £10,000 to £50,000). In 2022, it awarded £181,833 in new grants.

Historically, JTF has allocated most of its medical research grants directly to a handful of universities, primarily funding PhDs. None of the applications received were

subject to external peer review or any other expert assessment. In late 2022, JTF reviewed its medical research funding strategy to match its charitable objects more closely (funding research that has a high likelihood of benefitting patients). As a result, grants are now directed at translational research projects, and it has suspended PhD funding. Additionally, any new research grants are now awarded only to medical research charities that are members of the Association of Medical Research Charities (AMRC). This is because JTF values the rigorous scrutiny that the AMRC membership requirements provide which is especially helpful to The Foundation’s lay Board of Trustees.

The goal is to contribute to high quality research which is on the cusp of progressing towards clinical trials.

## LifeArc



LifeArc is a self-funded, not-for-profit medical research organisation. We take science ideas out of the lab and help turn them into medical breakthroughs that can be life-changing for patients. We have been doing this for more than 25 years and our work has contributed to five licensed medicines, including cancer drug pembrolizumab (Keytruda®), lecanemab for Alzheimer’s (Leqembi), and a diagnostic for antibiotic resistance.

Our work is in translational science – bridging the gap between academic research and clinical development, providing funding, research and expert knowledge, all with a clear and unwavering commitment to having a positive impact on patient lives. LifeArc is committed to spending £1.3 billion by 2030 in areas of high unmet medical need. LifeArc is a company limited by guarantee (registered in England and Wales under no. 2698321) and a charity (registered in England and Wales under no. 1015243 and in Scotland under no. SC037861).

In 2022 LifeArc provided funding to healthcare research via several different mechanisms, for example:

- our [Philanthropic Fund](#), providing grants to support medical research projects focused on the translation of rare disease
- a collaboration with the Francis Crick Institute to run an internal Translation Fund (approximately £2 million committed up to December 2022)
- in partnership with the Medical Research Council (MRC) and the Biotechnology and Biological Sciences Research Council, LifeArc committed £7.6 million in 2021 to the Innovation Hubs in Gene Therapy. Three Hubs were funded, managed by the MRC
- in partnership with the NIHR, LifeArc committed £1.9 million towards clinical testing exacerbation detection devices in cystic fibrosis and bronchiectasis (Project Breathe). The award is managed by the NIHR

The data included in the 2022 analysis is all from LifeArc's Philanthropic fund. Thirty-three awards were considered active in 2022 (had a signed award letter or agreement, had received at least one instalment of the award and had not met the final report milestone). Of these 33 projects, 13 were awarded via funding calls run in partnership with another organisation (Action Medical Research (5), the Great Ormond Street Hospital Charity (5) and the Chief Scientist Office (CSO) of Scotland (3)). An additional five

awards were co-funded by at least one additional external partner (The Aplastic Anaemia Trust, PSC support, MND Association, Cystic Fibrosis Trust + Rosetrees Trust and DEBRA Austria). Manual coding of HRCS was kindly provided by MRC.

Find out more about our work on [www.lifearc.org](http://www.lifearc.org) or follow us on [LinkedIn](#) or [Twitter](#).

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## Nuffield Council on Bioethics



The Nuffield Council on Bioethics is a leading independent policy and research centre, and the foremost bioethics body in the UK. We identify, analyse, and advise on ethical issues in biomedicine and health so that decisions in these areas benefit people and society.

The Nuffield Council on Bioethics is jointly funded by the Nuffield Foundation, Wellcome, and the Medical Research

Council (part of UK Research and Innovation). We anticipate developments and trends in health and life sciences that pose fundamental ethical questions to society. We undertake rigorous ethical analysis involving a range of engagement, interdisciplinary deliberation and involvement of relevant stakeholders and communicate this analysis and advice. We make policy recommendations to Government and other relevant bodies and disseminate our work through published reports, [policy notes](#), and other outputs.

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## Nuffield Foundation



The Nuffield Foundation funds research, development and analysis projects that advance the educational opportunity and social wellbeing across the UK. The Foundation funds research with the aim to improve the design and operation of social policy, within Education, Welfare and Justice. In addition to this research, the Nuffield Foundation administers the Oliver Bird Fund, with up to £12.5 million dedicated to

researching the implications of living with musculoskeletal conditions. In partnership with Versus Arthritis, the programme has awarded £5.8 million so far, with the most recent call in 2021 focusing on the links between musculoskeletal conditions and economic and social well-being.

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## RS Macdonald Charitable Trust



The RS Macdonald Charitable Trust was established in 1978.

We are an endowed Trust, and invest in charities across Scotland, to the value of around £3m each year. Our funding is distributed around several themes set by our Trustor. Two of our themes are neurological conditions and visual impairment and within each we fund support services and medical research. Our current focus within medical research is twofold: we provide direct funding to universities in Scotland, by way (principally) of seedcorn grants. We also directly fund research charities, to fund projects which are looking into these themes in Scotland. There is no dedicated budget for each our funding themes and we allocate according to the level of ask and the recommendations formed during our assessment process. We do not undertake any in-house research. We are particularly interested in early career researchers and in funding post-doctoral research which may open opportunities to support larger grant funding.

The two funding themes are wide ranging. One of our principal relationships is with a Scottish University, whose seedcorn funding is addressing the following health conditions: epilepsy, Alzheimer's, Parkinson's, schizophrenia, autism and others. We also have a grant dedicated to neurophotonics and its application to neurodegenerative conditions. An example of one of these studies is "Illuminating Synaptic Activity in the Nervous System". There have also been grants provided to help develop technology assisted care for those living with neurological conditions.

In the calendar year we provided six grants within medical research, average value £64,054. The total value of the awards made is £384,324.



# Appendix 2

## Combined UK Spend Breakdown by Funding Organisation

### Part One – Direct Awards

Key:

\* Funding Organisation is a member of the Health Research Analysis Forum (HRAF) and has participated in every analysis to date. In this 2022 report, data from these 12 funders may be presented separately as 'HRAF Funders' but will also appear in 'All Funders' groups.

# Funding organisation is AMRC member that participated in the UKCRC Donation to Innovation report (2007), and data from this report is displayed under 2004/05 columns.

Note: All tables in this report may contain small rounding errors. Values from previous reports have been adjusted for inflation, see **Appendix 11** for details.

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
Academy of Medical Sciences	-	-	-	£3.9m	£9.0m	-	£9.0m
Action for A-T	-	-	-	-	£0.1m	-	£0.1m
Action Medical Research	£2.8m	-	£3.1m	£3.5m	£2.4m	-	£2.4m
Against Breast Cancer	-	-	-	-	£0.5m	<£0.1m	£0.5m
Alopecia UK	-	-	-	-	<£0.1m	-	<£0.1m
Alzheimer's Research UK	£2.0m	-	£4.8m	£16.6m	£8.6m	£6.1m	£14.7m
Alzheimer's Society	£1.4m	-	£3.1m	£9.2m	£3.7m	£1.1m	£4.7m
Anthony Nolan	-	-	-	£0.8m	£0.8m	-	£0.8m
Antibiotic Research UK	-	-	-	-	£0.2m	-	£0.2m
Arts and Humanities Research Council	-	-	£3.4m	£3.4m	£9.0m	<£0.1m	£9.0m
Asthma + Lung UK	£3.3m	-	£0.9m	£1.5m	£4.5m	-	£4.5m
Ataxia UK	-	-	£0.1m	<£0.1m	£0.5m	<£0.1m	£0.6m
Ataxia-Telangiectasia Society	-	-	-	-	£0.1m	-	£0.1m
Autistica	-	-	-	£0.8m	£0.3m	<£0.1m	£0.3m
Barts Charity	-	-	-	-	£18.5m	£2.8m	£21.3m
Big C	-	-	-	-	£0.2m	<£0.1m	£0.2m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
Biotechnology and Biological Sciences Research Council	£21.5m	£35.1m	£69.7m	£50.0m	£88.0m	£4.3m	£92.3m
BLISS	-	-	-	-	<£0.1m	-	<£0.1m
Blood Cancer UK	-	-	-	£18.4m	£5.1m	£0.1m	£5.3m
Bone Cancer Research Trust	-	-	-	-	£0.6m	-	£0.6m
Borne	-	-	-	-	£0.2m	£0.2m	£0.5m
Bowel Cancer UK	-	-	-	£0.2m	<£0.1m	<£0.1m	<£0.1m
BRACE	-	-	-	£0.5m	£0.3m	<£0.1m	£0.3m
Brain Research UK	-	-	-	£0.8m	£0.6m	£1.6m	£2.1m
Brain Tumour Research	-	-	-	-	£1.1m	<£0.1m	£1.1m
Breast Cancer Now	£7.3m	-	£6.9m	£9.0m	£14.9m	<£0.1m	£14.9m
British Association for Counselling and Psychotherapy	-	-	£0.1m	£0.1m	<£0.1m	<£0.1m	<£0.1m
British Heart Foundation	£65.9m	£74.9m	£81.4m	£93.1m	£84.8m	£2.9m	£87.6m
British Skin Foundation	-	-	-	£0.7m	£0.2m	<£0.1m	£0.3m
British Society for Research on Ageing	-	-	-	-	<£0.1m	-	<£0.1m
Cancer Research UK	£249.6m	£288.8m	£290.2m	£253.5m	£232.2m	£70.7m	£302.9m
Cancer Research Wales	-	-	-	-	£1.3m	<£0.1m	£1.3m
Cerebra	-	-	-	-	£0.3m	-	£0.3m
Chief Scientist Office (Scotland)	£19.4m	£27.9m	£31.8m	£26.8m	£27.6m	£44.4m	£72.0m
Childhood Eye Cancer Trust	-	-	-	<£0.1m	<£0.1m	<£0.1m	<£0.1m
Children with Cancer UK	-	-	£1.5m	-	£2.5m	<£0.1m	£2.5m
Children's Cancer and Leukaemia Group	-	-	-	-	£0.5m	-	£0.5m
Chronic Disease Research Foundation	-	-	-	£0.4m	£1.1m	-	£1.1m
Coeliac UK	-	-	-	<£0.1m	<£0.1m	<£0.1m	<£0.1m
Crohn's & Colitis UK	-	-	-	-	£0.5m	<£0.1m	£0.6m
Cure Parkinson's	-	-	-	£0.5m	£0.6m	<£0.1m	£0.6m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
Cystic Fibrosis Trust	-	-	-	£4.4m	£2.7m	£0.2m	£2.9m
DEBRA	-	-	-	£0.5m	£0.2m	-	£0.2m
Department for Environment, Food and Rural Affairs	-	-	-	£8.7m	£8.4m	-	£8.4m
Department for the Economy, Northern Ireland	-	-	-	£1.0m	£0.3m	-	£0.3m
Department for Transport	-	-	-	<£0.1m	£0.8m	-	£0.8m
Department of Health and Social Care (including NIHR)	£137.9m	£251.6m	£328.7m	£394.5m	£578.1m	£566.2m	£1144.3m
Diabetes Research & Wellness Foundation	-	-	-	£0.2m	£0.2m	£0.1m	£0.3m
Diabetes UK	£6.4m	-	£7.0m	£7.8m	£7.8m	<£0.1m	£7.9m
Duchenne UK	-	-	-	£0.3m	£0.6m	<£0.1m	£0.7m
Dunhill Medical Trust	-	-	£2.5m	£2.3m	£3.8m	-	£3.8m
Economic and Social Research Council	£13.8m	£32.8m	£41.7m	£53.3m	£46.1m	£23.4m	£69.4m
Engineering and Physical Sciences Research Council	£37.5m	£111.4m	£129.2m	£123.5m	£120.3m	£88.0m	£208.3m
Epilepsy Research UK	£0.3m	-	£0.8m	£0.7m	£0.9m	<£0.1m	£0.9m
Fight for Sight	-	-	£3.6m	£2.9m	£1.8m	£0.3m	£2.1m
Friends of EORTC	-	-	-	£0.4m	£0.3m	<£0.1m	£0.3m
Friends of Rosie Children's Cancer Research Fund	-	-	-	-	<£0.1m	-	<£0.1m
Glasgow Children's Hospital Charity	-	-	-	-	<£0.1m	<£0.1m	<£0.1m
Grace Kelly Childhood Cancer Trust	-	-	-	-	<£0.1m	-	<£0.1m
Great Ormond Street Hospital Children's Charity	-	-	£5.0m	£0.8m	£5.4m	£1.3m	£6.7m
Guts UK	-	-	£0.4m	£0.1m	£0.3m	<£0.1m	£0.3m
Health and Care Research Wales (Welsh Government)	£2.6m	£20.2m	£10.4m	£9.9m	£9.9m	£29.4m	£39.3m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
Health and Social Care Research and Development Division (HSC R&D) of Public Health Agency, Northern Ireland	£12.1m	£11.9m	£5.1m	£8.6m	£7.8m	£11.4m	£19.2m
Health Education England (Department of Health and Social Care funded)	-	-	-	£8.6m	£11.3m	£2.9m	£14.2m
Healthcare Infection Society	-	-	-	-	£0.1m	-	£0.1m
Heart Research UK	-	-	-	£0.9m	£1.4m	£0.3m	£1.7m
Innovate UK	-	-	£48.2m	£88.6m	£126.4m	£116.4m	£242.8m
Institute of Alcohol Studies	-	-	-	-	<£0.1m	<£0.1m	<£0.1m
JDRF	-	-	£2.9m	£4.5m	£1.3m	<£0.1m	£1.3m
Kidney Research UK	£2.1m	-	£3.6m	£6.1m	£2.8m	£1.0m	£3.8m
Leeds Hospitals Charity	-	-	-	-	£1.0m	£0.8m	£1.8m
Leukaemia & Lymphoma NI	-	-	-	£0.1m	£0.3m	£0.5m	£0.8m
Leukaemia UK	-	-	-	£0.1m	£0.9m	-	£0.9m
LifeArc	-	-	-	-	£3.0m	-	£3.0m
Lister Institute of Preventive Medicine	-	-	-	£0.8m	£1.2m	-	£1.2m
Macular Society	-	-	£0.2m	£0.6m	£0.9m	<£0.1m	£1.0m
Marie Curie	£2.6m	-	£1.6m	£2.8m	£2.4m	-	£2.4m
<b>Medical Research Council</b>	<b>£477.4m</b>	<b>£733.0m</b>	<b>£737.0m</b>	<b>£733.7m</b>	<b>£713.1m</b>	<b>£54.0m</b>	<b>£767.0m</b>
Medical Research Foundation	-	-	-	£2.1m	£4.2m	£0.5m	£4.7m
Medical Research Scotland	£1.0m	-	£0.9m	£1.7m	£1.7m	£0.3m	£2.0m
Meningitis Now	-	-	£0.5m	£0.2m	£0.1m	-	£0.1m
Meningitis Research Foundation	-	-	£0.2m	£0.5m	<£0.1m	-	<£0.1m
Mesothelioma UK	-	-	-	-	<£0.1m	-	<£0.1m
MND Association	£0.9m	-	£1.6m	£4.4m	£3.1m	£0.1m	£3.3m
MND Scotland	-	-	-	-	£0.8m	-	£0.8m
Moorfields Eye Charity	-	-	-	£4.6m	£0.2m	£4.9m	£5.1m
MQ Mental Health Research	-	-	<£0.1m	£2.0m	£0.7m	-	£0.7m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
MS Society	£3.7m	-	£2.6m	£4.6m	£5.0m	<£0.1m	£5.1m
Multiple System Atrophy Trust	-	-	-	£0.2m	£0.3m	-	£0.3m
Muscular Dystrophy UK	£2.1m	-	-	£2.3m	£0.8m	£0.2m	£1.1m
Myeloma UK	-	-	-	-	£0.5m	£0.5m	£1.0m
Myrovlytis Trust	-	-	-	-	£0.2m	-	£0.2m
National Centre for the Replacement, Refinement and Reduction of Animals in Research	-	-	£6.8m	£5.3m	£5.4m	-	£5.4m
Natural Environment Research Council	-	-	£4.9m	£7.2m	£12.9m	<£0.1m	£12.9m
Neuroblastoma UK	-	-	-	-	£0.4m	-	£0.4m
Neurosciences Research Foundation	-	-	-	-	<£0.1m	-	<£0.1m
North West Cancer Research	-	-	-	£1.7m	£1.8m	<£0.1m	£1.8m
Northern Ireland Chest, Heart and Stroke	-	-	£0.2m	£0.2m	£0.4m	-	£0.4m
Nuffield Foundation	-	-	-	£0.6m	£1.1m	-	£1.1m
Oracle Cancer Trust	-	-	-	-	£0.3m	-	£0.3m
Orthopaedic Research UK	-	-	£0.6m	£0.2m	£0.4m	-	£0.4m
Ovarian Cancer Action	-	-	-	£0.3m	£0.7m	<£0.1m	£0.7m
Pancreatic Cancer UK	-	-	£0.6m	£0.9m	£1.0m	<£0.1m	£1.0m
Parkinson's UK	£1.9m	-	£5.9m	£4.2m	£1.9m	<£0.1m	£2.0m
Pharmacy Research UK	-	-	£0.2m	£0.2m	<£0.1m	<£0.1m	<£0.1m
Prostate Cancer Research	-	-	-	-	£1.5m	-	£1.5m
Prostate Cancer UK	-	-	£4.7m	£7.1m	£6.2m	-	£6.2m
PSC Support	-	-	-	-	<£0.1m	-	<£0.1m
Psoriasis Association	-	-	-	-	£0.2m	<£0.1m	£0.3m
Research England	-	-	-	-	-	£12.4m	£12.4m
Retina UK	-	-	-	-	£0.2m	<£0.1m	£0.3m
Royal Academy of Engineering	-	-	-	£1.8m	£3.5m	-	£3.5m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
Royal College of Anaesthetists	-	-	-	-	<£0.1m	-	<£0.1m
Royal Hospital for Neuro-disability	-	-	£0.1m	£0.2m	<£0.1m	-	<£0.1m
Royal National Institute for Deaf People	-	-	£1.2m	£1.2m	£0.7m	<£0.1m	£0.8m
Royal Osteoporosis Society	£0.2m	-	-	<£0.1m	£0.2m	-	£0.2m
Sarcoma UK	-	-	£0.1m	£0.4m	£0.6m	<£0.1m	£0.7m
Science and Technology Facilities Council	-	-	-	£1.6m	£7.2m	£47.1m	£54.2m
Scleroderma & Raynaud's UK	-	-	-	-	£0.3m	-	£0.3m
Scoliosis Association UK	-	-	-	<£0.1m	£0.1m	-	£0.1m
Sight Research UK	-	-	-	-	<£0.1m	£0.2m	£0.2m
Sir Jules Thorn Charitable Trust	-	-	-	-	£2.2m	-	£2.2m
Solving Kids' Cancer	-	-	-	£0.1m	<£0.1m	<£0.1m	£0.1m
Spinal Research	-	-	-	-	£0.2m	£0.2m	£0.4m
Stoke Mandeville Spinal Research	-	-	-	-	£0.1m	-	£0.1m
Stroke Association	£2.5m	-	£2.2m	£3.3m	£2.0m	<£0.1m	£2.0m
Target Ovarian Cancer	-	-	-	£0.2m	£0.3m	-	£0.3m
Tenovus Cancer Care	£2.8m	-	£0.4m	£0.6m	£0.1m	-	£0.1m
The Brain Tumour Charity	-	-	£1.0m	£3.1m	£2.8m	£0.2m	£3.0m
The British Academy	-	-	-	-	£4.6m	-	£4.6m
The Encephalitis Society	-	-	-	-	<£0.1m	<£0.1m	<£0.1m
The Francis Crick Institute	-	-	-	£100.1m	£36.3m	£71.2m	£107.5m
The Health Foundation	-	-	-	£1.1m	£3.7m	£0.2m	£3.9m
The Kennedy Trust for Rheumatology Research	-	-	-	-	£4.7m	£4.7m	£9.3m
The Lewy Body Society	-	-	-	-	£0.2m	-	£0.2m
The Little Princess Trust	-	-	-	-	£4.0m	-	£4.0m
The Lullaby Trust	-	-	<£0.1m	<£0.1m	<£0.1m	-	<£0.1m

Funding Organisation	2004/05	2009/10	2014	2018	2022	2022 (Indirect)	2022 Total
The Migraine Trust	-	-	-	-	<£0.1m	-	<£0.1m
The Scar Free Foundation	-	-	-	-	£1.5m	<£0.1m	£1.5m
The Urology Foundation	-	-	-	<£0.1m	£0.4m	£0.1m	£0.5m
Tommy's	-	-	-	-	£0.4m	£0.9m	£1.3m
Tuberous Sclerosis Association	-	-	-	-	<£0.1m	-	<£0.1m
UK Research and Innovation (SIP funding)	-	-	-	-	-	£11.5m	£11.5m
UK Space Agency	-	-	-	£2.9m	£3.5m	-	£3.5m
Versus Arthritis	£49.2m	£32.8m	£24.3m	£24.7m	£18.1m	£0.1m	£18.2m
Wellbeing of Women	-	-	-	£0.8m	£0.9m	<£0.1m	£0.9m
Wellcome Trust	£311.8m	£427.7m	£432.0m	£564.6m	£451.0m	£189.3m	£640.3m
Welsh Government Office for Science	-	-	-	£4.7m	£2.5m	£0.4m	£2.8m
Wessex Medical Research	-	-	-	£0.2m	£0.2m	<£0.1m	£0.2m
World Cancer Research Fund	-	-	£0.6m	£0.6m	£0.9m	<£0.1m	£0.9m
Worldwide Cancer Research	£8.0m	-	£3.9m	£1.4m	£0.7m	<£0.1m	£0.7m
Yorkshire Cancer Research	£3.1m	-	£2.5m	£6.7m	£3.1m	<£0.1m	£3.1m
<b>Grand Total</b>	<b>£1.45bn</b>	<b>£2.05bn</b>	<b>£2.32bn</b>	<b>£2.73bn</b>	<b>£2.79bn</b>	<b>£1.38bn</b>	<b>£4.17bn</b>

## Part Two – Indirect Awards

### (a) Indirect spend in 2022 by funding organisation and type of indirect spending

Funding Organisation	Infrastructure	Training and studentships	Personal	Unclassified / Other	Grand Total
Association of Medical Research Charities*	£9.5m	£4.4m	£3.5m	£13.3m	£30.7m
Biotechnology and Biological Sciences Research Council	£0.4m	-	-	£3.9m	£4.3m
British Heart Foundation	£2.3m	£0.5m	-	<£0.1m	£2.9m
Cancer Research UK	£50.8m	£12.2m	<£0.1m	£7.6m	£70.7m
Chief Scientist Office, Scotland	£43.4m	<£0.1m	£1.0m	-	£44.4m
Department of Health and Social Care (including NIHR)	£556.2m	£1.2m	£8.8m	-	£566.2m
Economic and Social Research Council	£23.4m	-	-	-	£23.4m
Engineering and Physical Sciences Research Council	£27.3m	£43.8m	-	£16.9m	£88.0m
Health and Care Research Wales (Welsh Government)	£29.4m	<£0.1m	-	-	£29.4m
Health and Social Care Research and Development Division of Public Health Agency, NI	£10.4m	£0.5m	£0.3m	£0.2m	£11.4m
Health Education England	-	-	£2.9m	-	£2.9m
Innovate UK	£114.2m	-	-	£2.1m	£116.4m
Medical Research Council	£27.1m	£26.7m	£0.2m	-	£54.0m
Natural Environment Research Council	-	<£0.1m	-	-	<£0.1m
Research England	£12.4m	-	-	-	£12.4m
Science and Technology Facilities Council	£36.4m	<£0.1m	-	£10.6m	£47.1m
The Francis Crick Institute	£71.2m	-	-	-	£71.2m
The Health Foundation	-	-	-	£0.2m	£0.2m
UK Research and Innovation	£11.5m	-	-	-	£11.5m
Versus Arthritis	<£0.1m	£0.1m	-	<£0.1m	£0.1m
Wellcome Trust	£145.9m	£14.9m	£0.3m	£28.2m	£189.3m
Welsh Government Office for Science	£0.3m	<£0.1m	-	-	£0.4m
<b>GRAND TOTAL</b>	<b>£1.17bn</b>	<b>£104.4m</b>	<b>£17.0m</b>	<b>£82.9m</b>	<b>£1.38bn</b>

\* the AMRC entry represents the combined indirect awards from all members excluding BHF, CRUK, Versus Arthritis and Wellcome Trust (who are members of the HRAF).

The definitions of Infrastructure, Personal, and Training and Studentships can be found on [page 15](#). Any addition indirect funding is classified as 'Other' and is either described on [page 15](#) or in the funding organisation's qualitative submission in [Appendix 1](#).



## (b) Indirect spend assessments over time; 2014 to 2022

Indirect Spend	2014			2018			2022		
	£m	Index £m	%	£m	Index £m	%	£m	Index £m	%
Infrastructure	£885.6m	£1018.2m	90.0%	£1130.5m	£1223.2m	81.0%	£1172.4m	£1172.4m	85.2%
Training and studentships	£18.0m	£20.7m	1.8%	£85.4m	£92.4m	6.1%	£104.4m	£104.4m	7.6%
Personal	£1.8m	£2.1m	0.2%	£8.1m	£8.7m	0.6%	£17.0m	£17.0m	1.2%
Other / Uncoded	£78.8m	£90.6m	8.0%	£171.1m	£185.2m	12.3%	£82.9m	£82.9m	6.0%
<b>Grand Total</b>	<b>£984.2m</b>	<b>£1131.6m</b>	<b>100%</b>	<b>£1395.1m</b>	<b>£1509.5m</b>	<b>100%</b>	<b>£1376.7m</b>	<b>£1376.7m</b>	<b>100%</b>

This categorisation of indirect spending was introduced in 2014, and this table shows how this distribution has changed over the three analyses it has been used for.

## Appendix 3

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### Contributions of additional participating organisations to the 2022 analysis

The first two analyses in the *UK Health Research Analysis* report series focused on the twelve largest public and charity funders of health research, who collectively constitute the Health Research Analysis Forum (HRAF). In 2022, these 12 funders still contribute the majority (85%) of the total expenditure in this analysis.

However, since 2014 the *UK Health Research Analysis* report series has included awards from a range of additional funders; 52 in 2014, 111 in 2018 and 152 in 2022.

As the proportions by Research Activity, Health Category and geography for HRAF organisations alone did not differ significantly from the total (all organisations including HRAF) the main analysis focuses on the total all-organisation values, unless explicated stated otherwise (e.g. assessment of compound annual growth rates on **page 17**).

In this appendix we present both an analysis of the core HRAF organisations which is consistent across reports and an analysis of HRAF and non-HRAF organisations combined.

## Distributions by funder

One of the primary aims of the *UK Health Research Analysis* series is to widen participation to provide not just a comprehensive view of funding but also the depth and nuance of how and why so many organisations dedicate time and funding to support health research. For this report every award record submitted to us is valuable information and will contribute to how we view funding for a particular health category, research activity or other classifications used by those who access our publicly available datasets.

The 140 non-HRAF organisations submitting data to the analysis provided records of 6,637 awards with a value in 2022 of £723m. Of this, £14m was awarded internationally and £293m was classified as indirect, leaving £416m from 5,348 awards for inclusion in the main analysis.

However, in comparing aggregated data much of the focus will be on which organisations contribute the most, particularly when comparing against other aggregated data (such as the HRAF funders). For example, of the £416m of spend submitted to the main analysis in 2022 from non-HRAF sources, 30 percent is from just one organisation (Innovate UK, £129m) and over two-thirds is from just 13 non-HRAF organisations with the largest spend. Similarly, 84% £247m of £293m of indirect award funding comes from just four organisations (Innovate UK, Research England, The Francis Crick Institute and the Science and Technology Facilities Council).

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## Impact on Research Activity

The £416m of research funding from the 140 additional funders in 2022 produces relatively small shifts (all <1.3%) in the all-funder distribution across research activities compared with the HRAF only portfolio. These shifts include an increase in *Treatment Development* (+1.3%) and decreases in *Underpinning* research (-1.0%), and *Treatment Evaluation* (-1.0%). Data from this comparison is shown in **Table 7**, below. This mirrors findings from both the 2014 and 2018 analyses, where there were similarly small variations between HRAF and all funder spending distributions.

In comparison between HRAF and non-HRAF organisations, there are more pronounced differences. HRAF organisations had a higher proportion of spend in both *Underpinning* and *Treatment Evaluation* (7.0% and 6.9%, respectively). We propose that the larger, dedicated

biomedical research funders have a greater capacity to support investigations into fundamental biological and socioeconomic systems coded as *Underpinning* than organisations with either limited capacity or a broader focus beyond health. Similarly support for clinical trials is costly, thus limiting the support for awards coded as *Treatment Evaluation* to those organisations with a research budget capable of such a burden.

In contrast, the 140 non-HRAF organisations have a higher proportion of spend in *Detection and Diagnosis* (6.7%) and *Treatment Development* (8.7%). Innovate UK's contribution to both these research activities is substantial. Indeed, Innovate UK is the fifth largest funder in this analysis after DHSC, MRC, Wellcome Trust and CRUK.

Data from this comparison is shown in **Figure 12**.

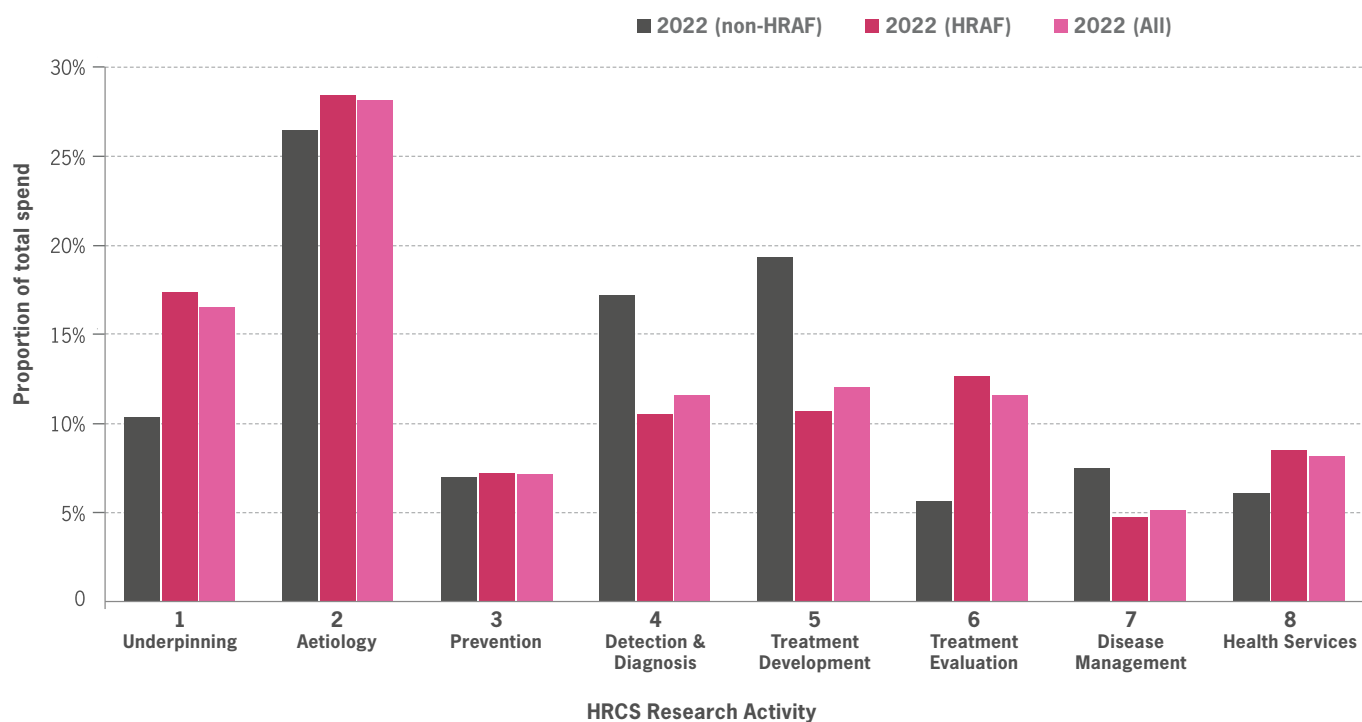


Figure 12 – Differences in the proportion of combined health research spend in 2022 by HRCS Research Activity for all organisation (152 total), HRAF funders (n=12) and non-HRAF organisations (n=140)

Research Activity Group	2022 (non-HRAF)		2022 (HRAF)		2022 (All)		Difference	
	Award Value	% Total	Award Value	% Total	Award Value	% Total	All vs HRAF	HRAF vs Non
1 Underpinning	£43m	10.4%	£412m	17.3%	£455m	16.3%	-1.0%	7.0%
2 Aetiology	£111m	26.6%	£677m	28.5%	£787m	28.2%	-0.3%	2.0%
3 Prevention	£29m	7.0%	£170m	7.2%	£200m	7.1%	0.0%	0.0%
4 Detection and Diagnosis	£72m	17.3%	£252m	10.6%	£323m	11.6%	1.0%	-6.7%
5 Treatment Development	£81m	19.4%	£253m	10.7%	£334m	12.0%	1.3%	-8.7%
6 Treatment Evaluation	£24m	5.7%	£300m	12.6%	£323m	11.6%	-1.0%	6.9%
7 Disease Management	£31m	7.5%	£112m	4.7%	£143m	5.1%	0.4%	-2.8%
8 Health Services	£25m	6.1%	£202m	8.5%	£227m	8.1%	-0.3%	2.3%
<b>Grand Total</b>	<b>£416m</b>	<b>100%</b>	<b>£2.38bn</b>	<b>100%</b>	<b>£2.79bn</b>	<b>100%</b>	<b>0.0%</b>	<b>0.0%</b>

Table 7 – Funding distribution by HRCS Research Activity for 2022 by non-HRAF (140), HRAF (12) or all organisations (152)

### Impact on Health Category

As with HRCS Research Activities, the introduction of additional funders to this analysis does not significantly disrupt the overall funding distribution by Health Category. A comparison of total funding (all 152 funders) versus the 12 HRAF funders which featured in the 2004/05 and 2009/10 reports, only 4 of 21 Health Categories vary by  $>\pm 0.5\%$ .

The Health Category that received a slightly higher proportion from total funding was *Cancer and neoplasms* (1.4% vs all funders, 9.1% vs non-HRAF funders). As discussed in the chapter dedicated to Health Categories

- the contribution of non-HRAF, predominantly charity organisations to *Cancer* research - is significant. This variation is also due to the inclusion of the Francis Crick Institute as a separate research organisation, which accounts for ~15% of non-HRAF funding. While the Crick receives core support from several HRAF organisations (MRC, CRUK and Wellcome Trust) its research programmes are chosen and implemented independently.

Data from this comparison is shown in **Figure 13**.

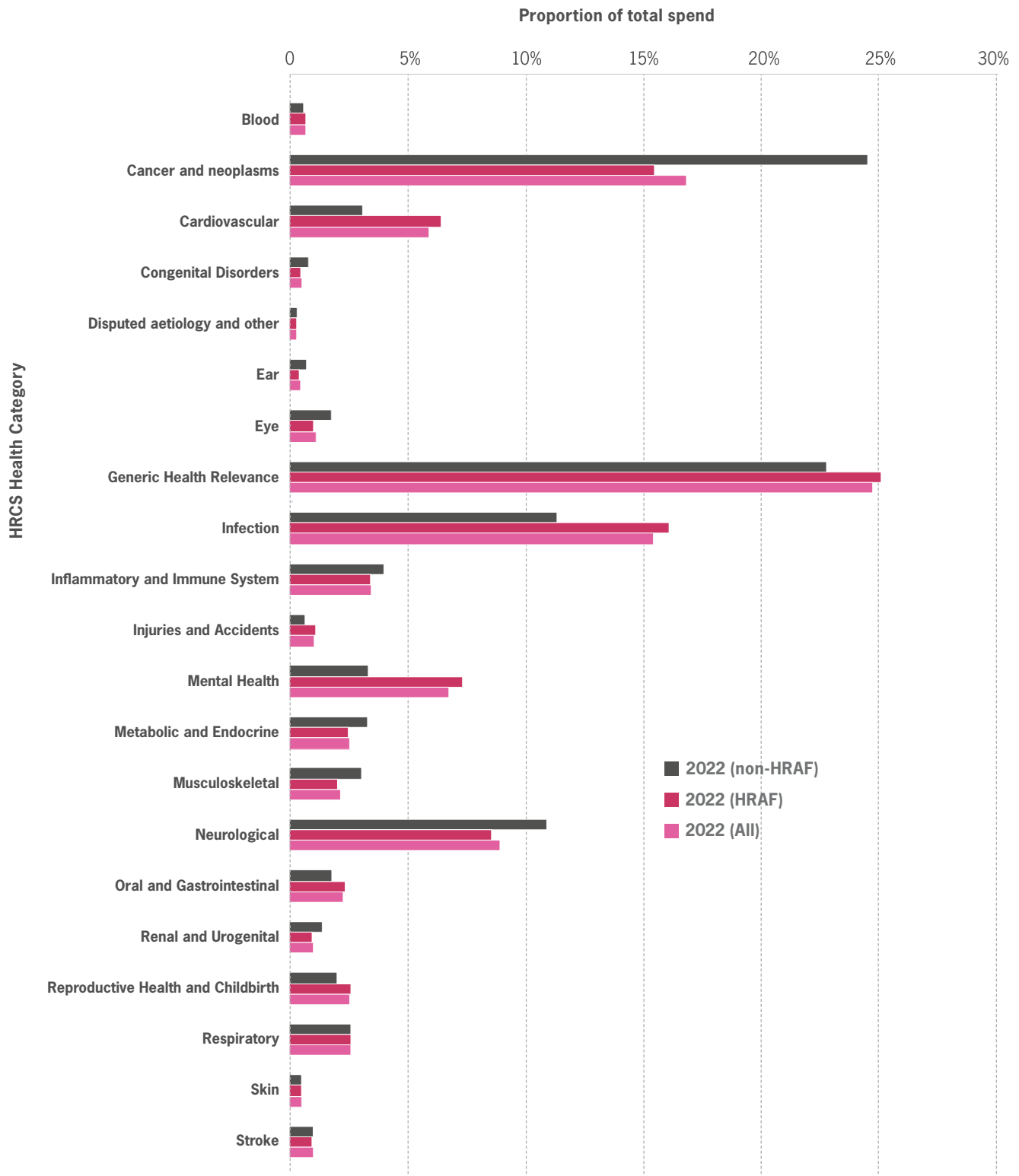


Figure 13 – Differences in the proportion of combined health research spend in 2022 by HRCS Health Category for all organisations (152 total), HRAF funders (n=12) and non-HRAF organisations (n=140)

Health Category	2022 (non-HRAF)		2022 (HRAF)		2022 (All)		Difference	
	Award Value	% Total	Award Value	% Total	Award Value	% Total	All vs HRAF	HRAF vs Non
Blood	£2m	0.6%	£15m	0.7%	£18m	0.6%	0.0%	0.1%
Cancer and neoplasms	£102m	24.5%	£367m	15.5%	£469m	16.8%	1.4%	-9.1%
Cardiovascular	£13m	3.1%	£152m	6.4%	£164m	5.9%	-0.5%	3.3%
Congenital Disorders	£3m	0.8%	£11m	0.4%	£14m	0.5%	0.1%	-0.3%
Disputed aetiology and other	£1m	0.3%	£6m	0.2%	£7m	0.3%	0.0%	-0.1%
Ear	£3m	0.7%	£10m	0.4%	£13m	0.4%	0.0%	-0.3%
Eye	£7m	1.8%	£23m	1.0%	£30m	1.1%	0.1%	-0.8%
Generic Health Relevance	£95m	22.8%	£597m	25.1%	£691m	24.8%	-0.3%	2.3%
Infection	£47m	11.3%	£383m	16.1%	£430m	15.4%	-0.7%	4.8%
Inflammatory and Immune System	£16m	4.0%	£80m	3.4%	£96m	3.4%	0.1%	-0.6%
Injuries and Accidents	£2m	0.6%	£25m	1.0%	£27m	1.0%	-0.1%	0.5%
Mental Health	£14m	3.3%	£174m	7.3%	£187m	6.7%	-0.6%	4.0%
Metabolic and Endocrine	£14m	3.3%	£58m	2.4%	£71m	2.6%	0.1%	-0.8%
Musculoskeletal	£13m	3.0%	£47m	2.0%	£59m	2.1%	0.2%	-1.1%
Neurological	£45m	10.9%	£203m	8.5%	£248m	8.9%	0.3%	-2.3%
Oral and Gastrointestinal	£7m	1.7%	£54m	2.3%	£62m	2.2%	-0.1%	0.6%
Renal and Urogenital	£6m	1.3%	£21m	0.9%	£27m	1.0%	0.1%	-0.4%
Reproductive Health and Childbirth	£8m	1.9%	£60m	2.5%	£68m	2.4%	-0.1%	0.6%
Respiratory	£11m	2.6%	£60m	2.5%	£70m	2.5%	0.0%	0.0%
Skin	£2m	0.5%	£11m	0.5%	£13m	0.5%	0.0%	0.0%
Stroke	£4m	1.0%	£22m	0.9%	£27m	0.9%	0.0%	-0.1%
<b>Grand Total</b>	<b>£416m</b>	<b>100%</b>	<b>£2.38bn</b>	<b>100%</b>	<b>£2.79bn</b>	<b>100%</b>		

Table 8 – Funding distribution by HRCS Health Category for 2022 by non-HRAF (140), HRAF (12) or all organisations (152)

# Appendix 4

## Additional Funding Sources for UK Health R&D Expenditure

The data submitted by participating organisations for this analysis - whether the direct awards supporting projects and programmes or the indirect funding supporting infrastructure - does not constitute the sum total of health-relevant funding in the UK. This appendix aims to identify and quantify some of the many other additional funding sources outside of the scope of this analysis that can nevertheless be identified as supporting UK health research.

### Universities, the 'dual support' system and core support for health research

As this analysis and other sources show, the majority of public and charity funded research takes place in universities and other elements of the Higher Education Institution (HEI) sector<sup>33</sup>. Within the UK, the public funding for research in the university sector in the UK is provided through two main routes;

1. Block allocations made by UK funding councils via a quality-related (QR) system of periodic assessment.
2. Funding won in peer reviewed competition from UKRI and other grant-making bodies such as medical research charities.

Most data in the *UK Health Research Analysis* series focuses on the latter, however a considerable proportion of the former is required to support health-related research. The QR funding supports research infrastructure necessary for universities to conduct research, including permanent academic staff salaries, premises, libraries, central computing costs and a contribution to postgraduate training. This is administered by the devolved funding councils to the different regions of the UK:

- **England** - In 2021/22, Research England (formerly HEFCE, now part of UKRI) had a total budget of £2.466bn, of which £1.545bn was allocated to QR funding of research<sup>34</sup>. Of this, we used an estimate of 30% from previous analyses<sup>35</sup> to provide a health-relevant proportion of QR funding of £463.5m
- **Scotland** - The Scottish Funding Council allocated a total of £242.9m to their Research and Knowledge Exchange Grants in 2021/22, but only £174m of this was available with a unit of assessment classification<sup>36</sup>. Using this Part A data, we see £54.1m (31% of £174m) classified to UoAs relevant to health and biomedicine. Therefore, we estimate £75.3m of the total £242.9 research funding would be relevant to health and biomedicine
- **Wales** - The Higher Education Funding Council for Wales (HEFCW) allocated £88.3m of QR funding in 2021/22 to research, of which £38.0m (43%) was classified to units of assessment relevant to health and biomedicine<sup>37</sup>

33 For example, the AMRC estimated that in 2018 approximately 87% of charity-funded medical research takes place in universities, based on awards in their grants database <https://www.amrc.org.uk/charity-research-support-fund-crsf>

34 Research England allocation for research 2021/22 <https://www.ukri.org/what-we-do/what-we-have-funded/research-england/re-funding-allocations-from-2021-to-2022/>. Total budget of £2.466bn, which includes mainstream QR funding including London weighting (£1.192bn), research degree programme (RDP) supervision fund (£272m), business research element (£74m) and research libraries (£7m), for a total of £1.545bn. We analyse the charity support contribution of £204m separately (see next section), and health-relevant awards from recurrent schemes (e.g. CCF, HEIF) are included in Research England's main submission to this analysis.

35 Previously estimates used HEFCE allocation data broken down by Unit of Assessment (UoA) classifies research by area, with 01-05 relevant to biomedicine. Research England no longer provides this metric, so we have estimated based on past *UK Health Research Analyses* (in 2014 and 2018) which calculated the proportion of health relevant QR funding to be 28 and 32% of total, respectively.

36 Scottish Funding Council (SFC) Research Excellence Grant 2021/22 is part of its University Funding Allocations: <https://www.sfc.ac.uk/publications-statistics/announcements/2021/SFCAN202021.aspx>

37 HEFCW Funding allocations for Higher Education in 2021/22, Annex A: <https://www.hefcw.ac.uk/en/publications/circulars/w21-15he-hefcws-funding-allocations-2021-22/>



- **Northern Ireland** – The Department for the Economy (DfE,NI) allocated £43.2m in 2020/21 to QR research funding, with £11.5m (26%) classified to units of assessment relevant to health and biomedicine<sup>38</sup>

Based on these sources, the total research budget relevant to health and biomedicine from QR funding is **£588.3m**.

## Support for full economic costing including charity-funded research

Funding from the other side of the dual support system is reliant on this core QR funding to support the full economic cost (FEC) of conducting and delivering research. For example, the research councils which now constitute UKRI have required, since 2006, to typically fund 80% of this FEC value. The recipient research organisation(s) must therefore agree to find the balance of FEC from other resources. While the absolute proportion can vary (e.g. work in MRC institutions or researchers/staff based overseas are 100% FEC funded) it is still broadly representative that 20% of the cost of research primarily funded via UKRI is met via funding from core QR funding.

Similarly, UK charities can only cover the direct cost of research. However, given the size of the charity sector in the UK, the funding councils provide separate QR streams to support the indirect costs of charity supported research:

- **England** - The Charity Research Support Fund (CRSF) is administered by Research England and was £203.5m in 2021/22<sup>39</sup>
- **Scotland** - The Scottish Funding Council allocates a charity support stream of funding within its Research Excellence Grants. This funding was £26.2m in 2021/22<sup>40</sup>

- **Wales** - In a revision to past allocations, HEFCW have replaced the ringfenced amount allocated in proportion to research income awarded to HEIs by charities through open competition with a set charity income stream at 10% of QR. Based on estimates above, this would be £3.8m for 2021/22<sup>41</sup>
- **Northern Ireland** - The Department for the Economy (DfE, NI) QR research funding stream for charity support funding allocated £3.39m in 2020/21<sup>42</sup>

Therefore, the combined total available charity support funding in the UK is **£236.9m**. In Appendix 5, we estimate that 80% of not-for-profit expenditure is health relevant, and we can therefore extrapolate that **£189.5m** of the charity support funding in the UK would be used to support health and biomedicine-related research.

38 Department for the Economy university recurrent research grant summary tables (note more recent data was not available at time of reporting): <https://www.economy-ni.gov.uk/publications/university-recurrent-research-grant-summary-tables>

39 Research England funding allocations 2021 to 2022: <https://www.ukri.org/publications/research-england-funding-allocations-2021-to-2022/>

40 Scottish Funding Council University Final Funding Allocations AY 2021-22: additional tables: <https://www.sfc.ac.uk/publications-statistics/announcements/2021/SFCAN202021-additional-tables.aspx>

41 HEFCW funding methods: <https://www.hefcw.ac.uk/en/funding/>

42 Department for the Economy University Recurrent Research Grant Summary for FY 2020/21 (note more recent data was not available at time of reporting): <https://www.economy-ni.gov.uk/publications/university-recurrent-research-grant-summary-tables>

## NHS funding of Health R&D

The funding of health-related R&D within the NHS is primarily derived from within the Department of Health and Social Care (England) and the National Institute for Health and Care Research (NIHR). This includes, among other streams, funding for Clinical Research Networks (CRNs) and Biomedical Research Centres (BRCs). In 2022 this core support is included in the 'indirect' assessment of this

analysis, valued at £566m. In combination with the £578m in our main analysis, the DHSC/NIHR data represents the largest contribution by value to this report. However, there are some additional elements of the funding landscape not captured, or captured somewhat indirectly, which must be addressed here.

## Devolved Government funding (NIHR Contributions)

In the reporting period, the devolved Governments made contributions to the DHSC to gain access to specific NIHR research programmes including HTA, PHR, HSDR and EME. These contributions allow their researchers to apply to these funding streams. However, as these awards are not made on any geographical criteria, the

amount in contributions and value of awards funded may not correlate. All grants in these communal research programmes awarded to Scotland, Wales or Northern Ireland are included in the analysis and are attributed to the devolved funders. The amounts paid in the 2021/22 financial year are below.

Contributors	Funding
CSO, Scotland	£14.487m
HCR, Wales	£5.750m
HSC, Northern Ireland	£3.411m

### Devolved Government funding for NIHR programmes

## NHS support for clinical academics

In 2022 there were 2,954 clinical academics employed across 34 UK Institutions<sup>43</sup>. Funding from NHS constitutes 1,210 (34%) of clinical academic posts, the remainder supported by universities (1,744, 50%) and other sources (523, 15%). These 1,210 NHS-supported posts consisted

of 406 Professors, 385 Readers/Senior Lecturers and 418 Lecturers. Based on current average clinical academic salaries<sup>44</sup>, this constitutes a further ~£87m in salary alone and will be considerably more when accounting for full economic costings for staffing.

43 Medical Schools Council Report Survey of Medical Clinical Academic Staffing Levels in UK Medical Schools – data taken from new interactive format, published May 2022. <https://www.medschools.ac.uk/clinical-academic-survey>

44 The British Medical Association (BMA) provides pay scales for medical academics, with the latest available as of 01/04/2022: <https://www.bma.org.uk/pay-and-contracts/pay/other-doctors-pay/medical-academics-pay-scales>. This estimation is therefore based on the median threshold salaries for Post-2009 Clinical Lecturers in England (threshold 6, £44,705) Senior Lecturers (3rd level, £65,584) and Consultants (threshold 6, £105,996).

## Total for Additional Funding Sources

The combined spending for health-related research outside of the scope of this analysis is **£864.8m**.

This brings the combined total of our main analyses (the fully HRCS-coded direct awards plus the supportive indirect awards) and additional funding sources to **£5.03bn** in 2022 (see below).

Funding Source	Detail	Value (£m)
QR funding from higher education funding councils (HEFCs)	Total based on the combined estimate of health-relevant expenditure from HEFC total QR budgets	588.3
Charity Support Funding	Estimation of FEC support for health-relevant research from the HEFC charity support funding streams	189.5
Devolved Government funding for NIHR programmes	All funding from CSO, HCRW and HSCNI are included in the main / indirect assessment. NIHR contributions are recorded above, but awards are already included in the main analysis.	n/a
NHS Support for Clinical Academics	Based on 2,954 clinical academics supported in 2022.	87.0
<b>Additional Sources of Funding Total</b>		<b>864.8</b>
<b>Main Analysis (Direct and Indirect Awards) Total</b>		<b>£4.17bn</b>
<b>Combined Total 2022 (Main analysis + Additional Funding)</b>		<b>£5.03bn</b>

### Final Combined Analysis Totals; additional analysis plus main direct and indirect analyses

While these additional sources are based on estimates, it is worth noting that this additional funding has – in a similar manner to indirect support – fallen in real terms. There are some changes in methodology between reports, in part due to variations in the availability or consistency of data sources used (e.g. Unit of Assessment classifications as a proxy for health in QR funding). However, after adjusting for these methodological variations, we estimate that these additional funding sources are fractionally higher than 2014 (+£6.7m) but have fallen since 2018 (-£32.4m), as outlined below.

Funding Source	2014 (£m, adjusted <sup>45</sup> )	2018 (£m, adjusted <sup>45</sup> )	2022 (£m)
QR funding from HEFCs	546.9	606.5	588.3
Charity Support Funding	210.3	198.7	189.5
NHS Support for Clinical Academics	100.9	92.1	87.0
<b>Additional Sources of Funding Total</b>	<b>858.1</b>	<b>897.2</b>	<b>864.8</b>

### Additional Funding Sources Analyses 2014 to 2022

45 To allow for comparisons across time, original figures from both 2014 and 2018 analyses were re-analysed using the same methods as the 2022 figures. These adjustments include apportioning QR funding using estimates of health-relevant UoAs, and using only an estimated 80% health-relevancy for charity support funding. All figures were then adjusted using GDP inflators for funding value in real terms as per the rest of this analysis.

# Appendix 5

## Total UK Health R&D Expenditure

### Estimating the health-relevant proportion of research and development

Since 2009 we have provided estimates of the total UK R&D expenditure on health research to contextualise the data gather for our main analysis and what other elements of the UK health research landscape remain to be assessed. While successive reports have captured increasing proportions of the public and charitable sources of funding for health research, we estimate that this accounts for only half of all health R&D within the UK, the remainder lying within the private sector and not publicly available to analyse.

In this report, a similar process to these previous analyses has been used to provide an estimate for total UK health R&D expenditure for 2022. However, due to changes in reporting over time, some methods for data gathering have been altered between reports, particularly between 2018 and 2022 with disruption from the pandemic and changes in ONS methodologies. While we have still presented the estimations for total UK health R&D expenditure from previous reports (adjusted for inflation) it has become increasingly difficult to draw direct comparisons with these findings and any conclusions drawn may not be valid.

Report	Total in analysis (real terms, £bn)	Total UK R&D estimate (real terms, £bn)	Approximate proportion captured in analysis
2009/10	2.46	10.12	24%
2014	4.67	9.77	47%
2018	5.20	9.38	55%
2022	5.03	10.13	50%

### Total UK R&D Expenditure

To provide an estimate for total health relevant R&D first requires a figure for total R&D expenditure across all disciplines. The UK Gross Domestic Expenditure on Research and Development (GERD) is issued annually by the Office for National Statistics (ONS) and the latest data for 2021 was released on the 17<sup>th</sup> of July 2023<sup>46</sup>. The total GERD for 2021 was £66.2bn. This is a significantly higher value than past reports in this series due to improvements in methodology by the ONS to ensure better representation of small businesses. However, it comes at a cost of reduced granularity within ONS reports (see following

sections for examples) which makes comparison between previous GERD figures used in our *UK Health Research Analysis* series challenging.

To assess the proportion of the GERD that is of health relevance requires separate assessment of expenditure by Business, Private Non-Profit, University and other research conducted in the sector to obtain appropriate estimations. These combined sources form the total UK health relevant R&D expenditure.

46 Office for National Statistics (2021). Gross Domestic Expenditure on Research and Development (GERD), 2021. <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgrossdomesticexpenditureonresearchanddevelopment/2021>

## Research and Development in the Private Sector

### Business

The Business Enterprise Research and Development (BERD), also reported annually by the ONS, gives a total expenditure within the business sector in 2021<sup>47</sup> of £46.9bn a significantly higher value than past reports in this series due to improvements in methodology by the ONS to ensure better representation of small businesses. In past our past reports we used breakdown by product groups (where 'pharmaceuticals' was our proxy for 'health-relevant') but with the revised methodology this is not

currently available for 2021. The last available year with such a breakdown was 2020, where pharmaceuticals constituted 18.6% of total business R&D spend (£5.02bn of £26.9bn); a level consistent with previous analyses. Without further publicly available data and uncertainty of how national statistics on R&D will be presented in the future, in this analysis we will use the conservative figure of £5.02bn from 2020, adjusted for inflation to £5.01bn for 2022 as per other 'real terms' calculations in this report.

### Overseas funding for health research

This analysis focuses primarily on UK derived health expenditure, thus overseas expenditure in UK health research is excluded from this assessment.

However, the contribution of overseas investment in UK R&D is substantial. Data of R&D expenditure from the GERD

2021 estimates a total of £7.04bn enters the UK from overseas, of which the majority (~£6.12bn, 87%) goes to industry, leaving 918m invested in charity, university and public research institutes (PRIs). The previous report estimated 20% of this funding would support health research, giving a total of £183.6m based on current data.

### Private Non-Profit (Charities)

Total Private Non-Profit (PNP) expenditure in the UK GERD for 2021 was £1.942bn. The majority of PNP expenditure (£1.313bn, 68%) is within the University sector (which is assessed separately, below), whilst a further £214m goes to Business and £83m to the public sector (UK Government / UKRI).

UK-based expenditure within the PNP sector is £973m, with the largest individual sector contribution of £332m from re-investment within PNP sector, which would include non-profit, charity funded research institutes (e.g. Wellcome's Sanger Institute, near Cambridge).

The AMRC reported a total research expenditure by their members of £1.55bn in 2021<sup>48</sup>. In direct comparison with the GERD data, we estimate 80% of PNP R&D expenditure is relevant to health<sup>49</sup>. Therefore, the health relevant

re-invested expenditure within the PNP sector is £266m (80% of £332m re-investment).

Of the remaining intra-PNP expenditure, Overseas (£106m) is excluded and Business (£53m) is accounted for elsewhere in this assessment, leaving £482m from Government, UKRI and Higher Education Institutions. Using the same proportion as above (80%) would provide an estimate of £386m health-relevant expenditure from these funding sources. **Thus, the estimated total expenditure within the PNP sector relevant to health is £652m.** While this figure remains broadly similar overall versus past analyses, the PNP vs other funding sectors highlights the financial difficulties experienced by non-profits, including medical research charities, and the additional support from the public sector required to support independent research.

47 Office for National Statistics (2022) Business Enterprise Research and Development 2021, released 22nd of November 2022. <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/2021>

48 Source: AMRC Expenditure Report 2021: <https://www.amrc.org.uk/research-expenditure-2021>

49 NOTE: The data used to calculate the PNP estimation comes from a biennial survey of PNP organisations of which a relatively few conduct research and development, whereas AMRC expenditure comes directly from financial return data, making this comparison problematic. However, the GERD report itself does acknowledge the majority of PNP organisations performing R&D specialise in mainly health and medical research.

## Research performed in the University Sector

The UK University Higher Education Institution (HEI) sector is primarily supported by government funding via the Higher Education Funding Councils (HEFCs) and the Research Councils via UKRI. In the GERD 2021, the HEFCs expenditure in the HEI sector was £2.280bn, while Research Council expenditure was £2.371bn. A further £1.313bn comes from PNPs, £0.683bn from Overseas, £1.354bn from Government Departments and £1.388bn from businesses giving a total of £9.389bn expenditure in the University Sector.

Data on HEIs in the GERD comes from the Higher Education Research and Development (HERD) data provided to the ONS by the Higher Education Funding Councils (HEFCs). This data in turn is monitored by the Higher Education Statistics Agency (HESA). To estimate HEI health-relevant spend, we have collated HESA data

on research income. This is not ideal, as expenditure and income do not necessarily correlate, but use of income data allows us to breakdown cost centres to separate biomedically relevant funding from other disciplines (see below). The total health-relevant income for latest available year (2021/22) is £3.635bn, constituting more than half (53%) of total HEI research income (£6.890bn). This relative proportion has remained remarkably consistent, although the level of income reported by HEIs has grown considerably; by £709m since 2009/10 and by £486m since 2016/17. At least some of this increase can be attributed to the transfer of MRC Units to University Units, which took place between 2012 and 2018 with ~£122m per annum of MRC expenditure transferred to the HEI sector.

Cost Centre	2009/10		2013/14		2016/17		2021/22		Differences	
	Income (real terms, £m)	% of Total	Income (real terms, £m)	% of Total	Income (real terms, £m)	% of Total	Income (£m)	% of Total	% since 09/10	% since 16/17
101 Clinical Medicine	1,814	62.0%	1,988	63.7%	2,164	63.5%	2,468	67.9%	5.9%	0.8%
102 Clinic Dentistry	22	0.8%	25	0.8%	22	0.6%	22	0.6%	-0.2%	-0.1%
103 Nursing & Allied Health Professionals	57	2.0%	59	1.9%	69	2.0%	92	2.5%	0.6%	0.3%
104 Psychology & Behavioural Science	99	3.4%	93	3.0%	218	6.4%	131	3.6%	0.2%	-3.3%
105 Health and Community Studies	67	2.3%	72	2.3%	85	2.5%	49	1.4%	-0.9%	-1.3%
106 Anatomy & Physiology	66	2.3%	67	2.2%	67	2.0%	55	1.5%	-0.7%	-0.6%
107 Pharmacy & Pharmacology	74	2.5%	75	2.4%	73	2.1%	69	1.9%	-0.6%	-0.4%
112 Biosciences	726	24.8%	742	23.8%	709	20.8%	748	20.6%	-4.2%	-1.9%
TOTAL Selected Cost Centres (101-107,112)	2,926	100%	3,120	100%	3,149	100%	3,635	100%		
<b>TOTAL (all cost centres)</b>	<b>4,935</b>		<b>5,390</b>		<b>5,802</b>		<b>6,890</b>			

Breakdown of income by cost centre (academic departments), for all UK Institutions available (n=221). Adapted from HESA Open Data (Table 5: Research grants and contracts).

## Research performed in (non-HEI) Public Sector

This assessment combines limited data from the GERD 2021 with other publicly available data to determine publicly funded research conducted in publicly funded facilities (excluding HEI, PNP and private sector)<sup>50</sup>.

The GERD 2021 gives a total funding from one area of the public sector to another of £3.05bn, the majority coming from Government Departments (£2.112bn, 69%) and UKRI (£938m, 31%)<sup>51</sup>. There are no figures readily available for health relevant research in this sector, thus the calculation of this value requires some additional data for various sources:

### Governmental Department Contributions

To determine a proportion for health-relevant contributions from Government departments, we used additional ONS data, Research and development expenditure by the UK government (2021), as this provides a breakdown by Government department<sup>52</sup>. The total civil department (i.e. excluding UKRI, HEFCs and MOD) spending is £3.517bn and the primary civil department for health-relevant R&D contributions is the National Health Service, with an estimated contribution for 2021 of £1.436bn, 41% of total<sup>53</sup>.

Using this proportion against GERD R&D funding from Government to Government (i.e. excluding UKRI, PNP, private sector), we estimate the health-relevant contribution to Public Research Institutes from Government

departments to be £767m (41% of the £1.872bn GERD 2021 total).

This is likely to be an underestimate of health-relevant Government R&D expenditure. The largest civil department after the NHS is the Department for Business, Energy and Industrial Strategy (BEIS), now split into the several Government Departments including the Department for Science and Technology, which core-funds UKRI but has several partner organisations (i.e. those organisations which receive allocations of departmental funding). While some of these organisations, and indeed other Government departments are included in this analysis the contribution is small and the majority of funding is concentrated in the HEI sector.

### UKRI Contributions

Data from the GERD 2021 has £63m of UKRI funding to Government and £875m to itself, although the vast majority of this is spent within Higher Education institutions as award funding or, in the case of Innovate UK, the private sector. Likewise many independent research institutions, such as the Francis Crick Institute, are core-supported

with funding from UKRI alongside charities. Thus, without separate data for independent but publicly owned research institutions, we estimate that UKRI expenditure on health-relevant research will already be included in this assessment via other sectors.

50 Note that past GERD reports have included 'Public Sector Research Institutes' as an independent sector, but due to changes in methodology this has not been available since 2019.

51 As noted, we are excluding overseas expenditure and are accounting for all health-related business R&D spend separately.

52 This ONS report differs from the GERD as it comprises not just in-house R&D, but also purchased R&D and other funding provided to external organisations for R&D. However, both collate data sourced from the GovERD, an annual census of R&D expenditure of government departments from over 140 departmental responders.

53 Source: Office for National Statistics (2023), Research and development expenditure by the UK government: 2021 <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgovernmentexpenditureonscienceengineeringandtechnology/2021>

### Charity contributions

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A few charities support research in dedicated research institutes, such as the Wellcome Trust Sanger Institute in Cambridge and Cancer Research UK's Beatson Institute in Glasgow, although they do also support work within institutes under public ownership. Using the estimation of the health-relevant proportion of private-not-profit expenditure calculated previously (**page 137**, 80%), we estimate that of the £83m of funding by charities to Government and UKRI estimated in the GERD 2021, that £66.4m will be health-related.

Estimated total health-relevant expenditure for Public Research Institutes

Combining these three estimates, provides an estimated total of £841m for health-related public sector research conducted outside of the private, university or charity sector<sup>54</sup>.

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### Total UK health-relevant R&D expenditure

**The combined total estimation of health-relevant R&D expenditure of all four research sectors was £10.13bn.**

Please refer to the main report on **page 20** for further assessment of this figure and its implications.

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54 Note this estimation uses a different methodology to previous analyses, due to the changes in publicly available data.



# Appendix 6

## Table of Total Funding Distribution by Research Activity Sub Groups

Research Activity Group	Research Activity sub-code	2004 /05	2009 /10	2014	2018	2022	vs. 04/05	vs. 2018
<b>Underpinning</b>	1.1 Normal biological development and functioning	28.28%	22.14%	17.03%	16.23%	12.07%	-16.21%	-4.16%
	1.2 Psychological and socioeconomic processes	1.27%	0.94%	1.17%	0.96%	1.03%	-0.25%	0.07%
	1.3 Chemical and physical sciences	1.50%	1.77%	1.46%	1.03%	0.95%	-0.55%	-0.08%
	1.4 Methodologies and measurements	0.12%	0.76%	0.57%	0.45%	0.51%	0.39%	0.06%
	1.5 Resources and infrastructure (underpinning)	2.45%	1.96%	2.47%	3.03%	1.74%	-0.71%	-1.29%
<b>Underpinning Total</b>		<b>33.63%</b>	<b>27.57%</b>	<b>22.69%</b>	<b>21.70%</b>	<b>16.31%</b>	<b>-17.32%</b>	<b>-5.39%</b>
<b>Aetiology</b>	2.1 Biological and endogenous factors	22.50%	20.24%	18.58%	19.58%	17.33%	-5.17%	-2.25%
	2.2 Factors relating to physical environment	5.42%	3.30%	3.68%	3.65%	3.54%	-1.88%	-0.11%
	2.3 Psychological, social and economic factors	1.60%	1.31%	1.10%	0.84%	1.16%	-0.44%	0.32%
	2.4 Surveillance and distribution	1.84%	2.42%	1.76%	1.85%	1.57%	-0.26%	-0.28%
	2.5 Research design and methodologies (aetiology)	0.22%	1.16%	0.75%	0.90%	0.94%	0.72%	0.04%
	2.6 Resources and infrastructure (aetiology)	3.11%	3.34%	3.46%	3.79%	3.63%	0.52%	-0.16%
<b>Aetiology Total</b>		<b>34.69%</b>	<b>31.77%</b>	<b>29.32%</b>	<b>30.61%</b>	<b>28.19%</b>	<b>-6.51%</b>	<b>-2.42%</b>
<b>Prevention</b>	3.1 Primary prevention interventions to modify behaviours or promote well-being	0.52%	1.33%	1.94%	1.97%	2.27%	1.76%	0.30%
	3.2 Interventions to alter physical and biological environmental risks	0.20%	0.40%	0.91%	1.02%	0.94%	0.74%	-0.08%
	3.3 Nutrition and chemoprevention	0.82%	0.63%	0.91%	0.52%	0.52%	-0.30%	0.00%
	3.4 Vaccines	0.91%	1.03%	0.91%	1.77%	2.84%	1.93%	1.07%
	3.5 Resources and infrastructure (prevention)	0.03%	0.36%	0.55%	0.61%	0.57%	0.54%	-0.04%
<b>Prevention Total</b>		<b>2.48%</b>	<b>3.75%</b>	<b>5.22%</b>	<b>5.89%</b>	<b>7.14%</b>	<b>4.66%</b>	<b>1.25%</b>

Research Activity Group	Research Activity sub-code	2004 /05	2009 /10	2014	2018	2022	vs. 04/05	vs. 2018
<b>Detection and Diagnosis</b>	4.1 Discovery and preclinical testing of markers and technologies	1.88%	2.57%	4.35%	5.09%	5.31%	3.44%	0.22%
	4.2 Evaluation of markers and technologies	2.17%	1.84%	3.00%	3.18%	3.57%	1.40%	0.39%
	4.3 Influences and impact	0.14%	0.12%	0.17%	0.12%	0.14%	0.00%	0.02%
	4.4 Population screening	0.52%	0.76%	0.73%	0.38%	0.36%	-0.16%	-0.02%
	4.5 Resources and infrastructure (detection)	0.57%	2.04%	1.95%	1.75%	2.20%	1.63%	0.45%
<b>Detection and Diagnosis Total</b>		<b>5.27%</b>	<b>7.33%</b>	<b>10.20%</b>	<b>10.52%</b>	<b>11.58%</b>	<b>6.32%</b>	<b>1.06%</b>
<b>Treatment Development</b>	5.1 Pharmaceuticals	3.85%	4.95%	6.01%	5.54%	6.28%	2.43%	0.74%
	5.2 Cellular and gene therapies	2.24%	1.46%	2.23%	2.33%	1.50%	-0.74%	-0.83%
	5.3 Medical devices	0.73%	0.50%	0.91%	0.72%	0.95%	0.22%	0.23%
	5.4 Surgery	0.57%	0.35%	0.44%	0.26%	0.31%	-0.26%	0.05%
	5.5 Radiotherapy	0.28%	0.39%	0.40%	0.30%	0.70%	0.41%	0.40%
	5.6 Psychological and behavioural	0.14%	0.25%	0.19%	0.23%	0.33%	0.19%	0.10%
	5.7 Physical	0.03%	0.14%	0.14%	0.10%	0.11%	0.09%	0.01%
	5.8 Complementary	0.01%	0.00%	0.01%	0.03%	0.02%	0.01%	-0.01%
	5.9 Resources and infrastructure (development of treatments)	0.77%	2.64%	2.71%	2.44%	1.77%	1.01%	-0.67%
<b>5 Treatment Development Total</b>		<b>8.61%</b>	<b>10.68%</b>	<b>13.04%</b>	<b>11.95%</b>	<b>11.96%</b>	<b>3.35%</b>	<b>0.01%</b>
<b>Treatment Evaluation</b>	6.1 Pharmaceuticals	3.11%	3.82%	4.22%	3.92%	4.67%	1.56%	0.75%
	6.2 Cellular and gene therapies	0.25%	0.16%	0.56%	0.46%	0.46%	0.21%	0.00%
	6.3 Medical devices	0.41%	0.35%	0.71%	0.71%	0.97%	0.56%	0.26%
	6.4 Surgery	0.70%	0.97%	1.07%	1.06%	1.18%	0.48%	0.12%
	6.5 Radiotherapy	0.42%	0.43%	0.28%	0.40%	0.46%	0.04%	0.06%
	6.6. Psychological and behavioural	0.41%	0.63%	0.83%	1.21%	1.60%	1.20%	0.39%
	6.7 Physical	0.40%	0.56%	0.58%	0.49%	0.60%	0.19%	0.11%
	6.8 Complementary	0.12%	0.05%	0.06%	0.01%	0.04%	-0.09%	0.03%
	6.9 Resources and infrastructure (evaluation of treatments)	2.46%	1.57%	1.37%	1.45%	1.59%	-0.87%	0.14%
<b>6 Treatment Evaluation Total</b>		<b>8.29%</b>	<b>8.55%</b>	<b>9.69%</b>	<b>9.71%</b>	<b>11.58%</b>	<b>3.28%</b>	<b>1.87%</b>

## Appendix 6

Research Activity Group	Research Activity sub-code	2004 /05	2009 /10	2014	2018	2022	vs. 04/05	vs. 2018
<b>Disease Management</b>	7.1 Individual care needs	1.11%	1.41%	2.15%	2.03%	2.81%	1.71%	0.78%
	7.2 End of life care	0.08%	0.10%	0.16%	0.21%	0.23%	0.15%	0.02%
	7.3 Management and decision making	0.97%	1.24%	1.42%	1.29%	1.53%	0.56%	0.24%
	7.4 Resources and infrastructure (disease management)	0.16%	0.49%	0.26%	0.49%	0.53%	0.38%	0.04%
<b>7 Disease Management Total</b>		<b>2.32%</b>	<b>3.23%</b>	<b>4.00%</b>	<b>4.02%</b>	<b>5.11%</b>	<b>2.79%</b>	<b>1.09%</b>
<b>Health Services</b>	8.1 Organisation and delivery of services	2.52%	3.43%	2.77%	2.81%	4.31%	1.79%	1.50%
	8.2 Health and welfare economics	0.62%	0.56%	0.54%	0.37%	0.31%	-0.30%	-0.06%
	8.3 Policy, ethics and research governance	0.60%	0.68%	0.82%	0.93%	1.20%	0.59%	0.27%
	8.4 Research design and methodologies	0.59%	1.15%	1.00%	0.47%	0.81%	0.23%	0.34%
	8.5 Resources and infrastructure (health services)	0.38%	1.30%	0.71%	1.02%	1.50%	1.13%	0.48%
<b>8 Health Services Total</b>		<b>4.70%</b>	<b>7.12%</b>	<b>5.84%</b>	<b>5.60%</b>	<b>8.13%</b>	<b>3.43%</b>	<b>2.53%</b>

# Appendix 7

## Details of Mapping between WHO DALY rates and HRCS codes

GHE	GHE Cause ID	Mapping to HRCS Health Categories	2002	2004	2012	2016	2019
			%	%	%	%	%
2	I-A. Infectious and parasitic diseases	Infection	1.39	1.40	1.38	0.99	1.12
38	I-B. Respiratory infections	Infection	3.11	1.68	2.60	3.10	2.93
42	I-C. Maternal conditions	Reproductive Health	0.32	0.43	0.03	0.05	0.03
49	I-D. Neonatal conditions	Reproductive Health	1.31	1.35	1.20	1.38	1.31
54	I-E. Nutritional deficiencies	Metabolic and Endocrine	0.55	0.38	0.46	0.50	0.57
61	II-A. Malignant neoplasms	Cancer	15.46	15.59	19.14	19.26	17.21
79	II-B. Other neoplasms	Cancer	0.24	0.27	0.34	0.41	0.36
80	II-C. Diabetes mellitus	Metabolic and Endocrine	1.32	1.80	1.29	1.74	3.58
81	II-D. Endocrine, Blood, Immune Disorders	Metabolic and Endocrine	1.25	1.28	1.02	0.86	1.95
82	II-E. Mental and Behavioural Disorders	Mental Health	26.08*	26.66*	13.66	10.13	11.13
94	II-F. Neurological conditions	Neurological			6.97	10.20	10.01
102	II-G. Sense organ diseases	Ear / Eye	4.42	7.04	1.54	4.87	4.16
110	II-H. Cardiovascular diseases	Blood / Cardiovascular / Stroke	17.17	16.18	16.10	15.77	13.05
117	II-I. Respiratory diseases	Respiratory	9.14	8.27	7.70	6.17	6.70
121	II-J. Digestive diseases	Oral and Gastrointestinal	5.08	5.09	4.00	4.00	4.50
126	II-K. Genitourinary diseases	Renal and Urogenital	1.22	0.93	2.81	1.83	3.07
133	II-L. Skin diseases	Skin	0.19	0.21	0.92	1.18	0.93
134	II-M. Musculoskeletal diseases	Musculoskeletal	4.06	4.11	9.31	7.79	7.96
140	II-N. Congenital anomalies	Congenital	1.16	1.22	0.95	1.25	0.98
147	II-O. Oral conditions	Oral and Gastrointestinal	0.71	0.63	0.80	1.74	1.42
152	III-A. Unintentional injuries	Injuries	4.07	3.75	6.45	5.03	5.40
160	III-B. Intentional injuries	Injuries	1.75	1.75	1.32	1.79	1.57
0	ALL CAUSES	-	100	100	100	100	100

Note: Over the course of the UK Health Research Analysis series there has been some minor modification to the GHE disease classifications, the most notable being the segregation of Neuropsychiatric Conditions (see \*) to Neurological Conditions and Mental and Behavioural Disorders. These changes allow for better comparison with the HRCS Neurological and Mental Health categories, which were previously assessed together. In general, the UK's burden of disease remains static for most disease classifications (<±1.5% differences) but with some notable exceptions; decreases in DALY rates are seen for Neuropsychiatric (HRCS Neurological & Mental Health) and Sense Organs (Ear & Eye), but increases in Malignant Neoplasms (Cancer), Genitourinary (Renal), Musculoskeletal and Injuries. Please note there are no GHE equivalent codes for three HRCS health categories; Inflammatory and Immune System, Generic Health Relevance and Other.

# Appendix 8

## International expenditure by country (top 30)

Recipient Country	# of awards	Spend in 2022	% of total spend
United States	189	£108.8m	50.6%
Switzerland	41	£23.4M	10.9%
Gambia	30	£11.2M	5.2%
South Africa	70	£8.4M	3.9%
India	17	£6.1M	2.8%
Australia	38	£5.5M	2.5%
Ireland	55	£5.1M	2.4%
Uganda	23	£5.1M	2.4%
Canada	31	£4.2M	1.9%
France	31	£3.5M	1.6%
Netherlands	23	£3.1M	1.4%
Italy	41	£3.0M	1.4%
Germany	22	£2.5M	1.2%
Japan	1	£2.1M	1.0%
South Korea	5	£2.0M	0.9%
Kenya	29	£2.0M	0.9%
Belgium	10	£1.9M	0.9%
Sweden	6	£1.9M	0.9%
Brazil	19	£1.4M	0.7%
Spain	23	£1.4M	0.6%
Singapore	5	£1.3M	0.6%
Tanzania	12	£1.2M	0.5%
Ghana	5	£0.9M	0.4%
Denmark	3	£0.8M	0.4%
Bangladesh	3	£0.6M	0.3%
Saudi Arabia	1	£0.6M	0.3%
Israel	9	£0.6M	0.3%
Mali	2	£0.5M	0.2%
Costa Rica	1	£0.5M	0.2%
Remaining overseas funding (41 countries)*	94	£5.7m	2.6%
<b>GRAND TOTAL</b>	<b>839</b>	<b>£215.1m</b>	<b>100%</b>

\*Of the 70 countries receiving funding from UK-based organisations participating in this analysis, 28 received less than £200,000.

Our main analysis focuses exclusively on UK health research. However, many awards from participating funders can be made directly to contracted organisations outside the UK. The summary of these awards – based on the primary funding recipient – presented here will not account for all overseas support or be directly comparable to other measures (e.g. Overseas Development Assistance, ODA, funding).

# Appendix 9

## Total funding distribution by organisation type; Health administrations, UKRI, charitable and other public/professional

### Part One - Health administrations, UKRI, charitable and other funding by HRCS Research Activity

Research Activity Group	Health administrations		UK Research and Innovation (UKRI)		Charities & not-for-profit		Other public / professional	
	Spend	%	Spend	%	Spend	%	Spend	%
1 Underpinning	£3.0m	0.5%	£227.0m	20.1%	£222.3m	22.3%	£3.1m	9.6%
2 Aetiology	£47.0m	7.4%	£366.5m	32.5%	£358.9m	36.0%	£14.7m	45.1%
3 Prevention	£83.4m	13.1%	£83.5m	7.4%	£28.8m	2.9%	£3.8m	11.5%
4 Detection and Diagnosis	£64.4m	10.1%	£140.4m	12.4%	£114.3m	11.5%	£4.4m	13.5%
5 Treatment Development	£28.2m	4.4%	£146.4m	13.0%	£156.0m	15.6%	£3.5m	10.9%
6 Treatment Evaluation	£194.0m	30.6%	£71.9m	6.4%	£57.0m	5.7%	£0.4m	1.1%
7 Disease Management	£87.3m	13.8%	£36.6m	3.2%	£17.7m	1.8%	£1.1m	3.3%
8 Health Services	£127.4m	20.1%	£55.9m	5.0%	£42.2m	4.2%	£1.6m	5.0%
<b>GRANT TOTAL</b>	<b>£634.7m</b>	<b>100%</b>	<b>£1.13bn</b>	<b>100%</b>	<b>£997.2m</b>	<b>100%</b>	<b>£32.6m</b>	<b>100%</b>

## Part Two - Health administrations, UKRI, charitable and other funding by HRCS Health Category

Health Category	Health administrations		UK Research and Innovation (UKRI)		Charities & not-for-profit		Other public / professional	
	Spend	%	Spend	%	Spend	%	Spend	%
Blood	£4.1m	22.9%	£10.4m	0.9%	£3.3m	18.5%	£0.0m	0.1%
Cancer and neoplasms	£48.2m	10.3%	£98.0m	8.7%	£321.3m	68.5%	£1.9m	0.4%
Cardiovascular	£31.5m	19.2%	£27.5m	2.4%	£104.4m	63.5%	£0.9m	0.5%
Congenital disorders	£3.6m	26.1%	£6.8m	0.6%	£3.4m	24.8%	£0.0m	0.2%
Disputed Aetiology and Other	£4.0m	57.1%	£2.4m	0.2%	£0.3m	3.6%	£0.3m	4.6%
Ear	£2.9m	23.1%	£7.0m	0.6%	£2.5m	19.9%	£0.1m	0.7%
Eye	£7.4m	24.4%	£14.6m	1.3%	£8.0m	26.5%	£0.2m	0.7%
Generic health relevance	£112.2m	16.2%	£367.7m	32.6%	£205.1m	29.7%	£6.5m	0.9%
Infection	£128.0m	29.8%	£180.6m	16.0%	£112.0m	26.1%	£9.1m	2.1%
Inflammatory and immune system	£11.2m	11.6%	£43.0m	3.8%	£41.0m	42.6%	£1.1m	1.2%
Injuries and accidents	£19.0m	69.4%	£5.0m	0.4%	£3.3m	12.1%	£0.0m	0.1%
Mental health	£79.2m	42.2%	£65.5m	5.8%	£39.9m	21.2%	£2.8m	1.5%
Metabolic and endocrine	£19.7m	27.6%	£36.5m	3.2%	£14.8m	20.7%	£0.4m	0.5%
Musculoskeletal	£17.6m	29.8%	£24.3m	2.2%	£13.4m	22.7%	£3.9m	6.5%
Neurological	£32.1m	12.9%	£124.5m	11.0%	£88.8m	35.8%	£2.6m	1.0%
Oral and gastrointestinal	£24.0m	38.9%	£28.7m	2.5%	£8.5m	13.8%	£0.4m	0.7%
Renal and urogenital	£12.9m	48.1%	£9.7m	0.9%	£4.2m	15.5%	£0.1m	0.4%
Reproductive health and childbirth	£31.6m	46.2%	£25.8m	2.3%	£10.4m	15.2%	£0.6m	0.9%
Respiratory	£24.6m	35.0%	£38.3m	3.4%	£6.2m	8.8%	£1.4m	1.9%
Skin	£8.0m	61.2%	£3.1m	0.3%	£1.8m	14.1%	£0.2m	1.3%
Stroke	£13.0m	48.9%	£8.7m	0.8%	£4.7m	17.9%	£0.1m	0.4%
<b>Grand Total</b>	<b>£635m</b>	<b>22.7%</b>	<b>£1.13bn</b>	<b>40.4%</b>	<b>£997m</b>	<b>35.7%</b>	<b>£33m</b>	<b>1.2%</b>

# Appendix 10

## Additional Methods

### Data analysis

#### Annualised values

The *UK Health Research Analysis* series has primarily used annualised values for each award, dependent on the award's total value ("commitment"), duration and period of activity in the reporting period (i.e. 01/01/2022 – 31/12/2022)<sup>55</sup>. Roughly 85% of award values are calculated using this method.

Using actual 'live' spend could provide a more accurate snapshot of activity in 2022 however actual spend data for

the period would only be available some months after the end of 2022 whereas expected commitment and duration information is often available from the outset for awards.

Note that any values quoted from previous analyses have been adjusted for inflation ('real terms', see below) and will therefore differ from those seen in previous reports.

#### Conversion of data

Following final coding and de-duplication/data cleaning processes, the complete analysis data set was converted from single award lines to multiple lines dependent on the number of both Health Category and Research Activity codes. For example, an award of £10,000 coded with two health categories and two research activities is converted from single line:

Award001	£10,000	HC1	HC2	RA1	RA2
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To multiple lines:

Award001	HC1	RA1	0.25	£2,500
Award001	HC1	RA2	0.25	£2,500
Award001	HC2	RA1	0.25	£2,500
Award001	HC2	RA2	0.25	£2,500

This conversion places all Health Categories and all Research Activities, regardless of number applied to the award in a single column. The number of new lines shows the proportions allocated to each category (4<sup>th</sup> column) and the original award value is also proportionally distributed. This allows the generation of pivot table summary data from which any required analysis can be performed.

The conversion to multiple lines was achieved through 'unpivoting' the dataset using Microsoft Power BI. A more detailed discussion document, including some 'how to' steps, is available via the [HRCS website](#).

<sup>55</sup> For example, an award with a total commitment value of £12,000 active for 12 months, beginning on the 1st of October 2022 would report an annualised spend of £3,000 in this analysis.



### Comparison analysis and calculation of proportion changes

To compare nominal funding values between the four previous analyses and the current 2022 data required an inflation adjustment to generate real terms values (i.e. at 2022 market prices). To achieve this, we used the Gross Domestic Product (GDP) deflators calculated by the ONS and issued by HM Treasury<sup>56</sup>, with the 2022 calendar year as the baseline (100). The GDP deflator values for 2004/05, 2009/10, 2014 and 2018 were 70.231, 79.888, 86.980 and 92.423, respectively. Therefore, to calculate the 2022 values of funding from previous analyses requires the original values to be converted by a factor of 1.423 for 2004/05 ( $=100/70.231$ ), 1.252 for 2009/10 ( $=100/79.888$ ), 1.149 for 2014 ( $=100/86.980$ ) and 1.082 for 2018 ( $=100/92.423$ ). These values are referred to as “real terms” in the text and tables.

Differences between current data and previous data, adjusted to current 2018 values, are presented in three main formats:

- **Difference:**  $= V_2 - V_1$ 
  - used for showing differences from the original value (V1) to the comparison value (V2) in

funding totals (i.e. raw difference in Pounds Sterling) or differences in the percentage of funding allocated to an area

- **Proportional Changes:**  $= (V_2 - V_1) / V_1 \times 100$ 
  - this shows percentage changes over time, calculated by comparing the difference in value proportional to the original value. This is used extensively when comparing between data from previous analyses, and the original value is usually referenced as ‘proportional to’, ‘compared to’ or ‘versus’ in the text and tables
- **Compound Annual Growth Rate (CAGR):**  
 $= (V_2 / V_1)^{(1/\#years)} - 1$ 
  - The CAGR is applied to give a value to the year-on-year changes, as it provides an average rate at which funding increases (or decreases) over time. This report uses the CAGR to show the annual rate of change over the various reporting intervals, up to the 18-year span from first report (2004/05) to latest (2022)

### Co-funding and geographic location

Unlike other analyses of health research, we have gone to significant lengths to obtain details of co-funding from participating organisation and search the combined dataset for shared titles/abstracts to identify awards where funding is shared between multiple organisations. The data presented in the final analysis is therefore only the funders individual contributions, or as close as we are able. This avoids duplication of award values.

However due to the nature of award funding and financial reporting, we are unable to distinguish how much of an awards value is being distributed to co-applicants and other collaborations. Most funding organisations provide

awards to a single, principal award recipient, from which the funds can be distributed as needed. This report only demonstrates where the initial award is made, not necessarily where all research funded by that award is being conducted. This skew of geographical distribution is also varied between different organisations. Smaller funders tend to make awards to single researchers at a fixed location, whereas larger funders can support complex programmes involving dozens of researchers. In particular, Innovate UK awards can have a high number (20+) of co-applicants or project partners associated with a single award. As data availability increases this caveat could be addressed in future analyses.

56 HM Treasury National Statistics Autumn Statement (December 2022) <https://www.gov.uk/government/statistics/gdp-deflators-at-market-prices-and-money-gdp-december-2022-quarterly-national-accounts>

### Spearman's rank correlation coefficient

To compare similarity in funding priorities, Spearman's Rank Correlation Coefficient is used. This statistical measure is used to compare two sets of nonparametric variables by rank to assess how similar or dissimilar they are. In this context, a perfect positive correlation ( $r=1$ )

would denote matches in funding priorities, whereas a perfect negative correlation ( $r=-1$ ) would denote polar opposite funding prioritisation. In general, a coefficient value of  $>\pm 0.8$  would suggest good correlation between two datasets.

### Oversight of the process

The compilation of data was managed via the Health Research Analysis Forum (HRAF). The HRAF includes

representatives from the 12 original HRCS participating organisations plus AMRC.

### Ownership of the data

Data collected in the course of this work is owned by the organisations funding the research and held in confidence by the MRC. Details of individual awards will not be circulated or published unless agreement is obtained in advance by participating organisations.

The dataset used in this analysis is available via the [HRCS website](#) and we encourage other organisations to

make use of this data to perform further analysis beyond the scope of this report. This dataset contains all awards used in the analysis although certain modifications have been made to meet each participating organisations requirements for data publication and sharing. Any subsequent use of this data in publications and/or use of the HRCS coding process itself must cite the UKCRC as per the [conditions of use](#) also on the HRCS website.

### Understanding the Health Research Classification System

The Health Research Classification System (HRCS) is a two-dimensional framework for classifying research awards. One dimension of the framework, the Research Activity Codes, classifies awards according to type of research activity. The other dimension, the Health Categories, classifies research according to the area of health and disease being studied. Full details of the HRCS are available to download from [www.hrcsonline.net](http://www.hrcsonline.net).

The HRCS Research Activity codes are modelled on the [Common Scientific Outline](#) which is a cancer research specific classification system developed by the International Cancer Research Partners. The Common Scientific Outline has been successfully used by the National Cancer Research Institute (NCRI) Partners for the [strategic analysis of cancer research](#) in the UK. The Research Activity Codes describe broad areas of research activity organised into eight overarching categories:

- **Underpinning Research (Underpinning)** - research that underpins investigations into the cause, development, detection, treatment and management of diseases, conditions and ill health
- **Aetiology** – identification of determinants that are involved in the cause, risk or development of disease, conditions and ill health
- **Prevention of Disease and Conditions, and Promotion of Well-Being (Prevention)** – research aimed at the primary prevention of disease, conditions or ill health, or promotion of well-being
- **Detection, Screening and Diagnosis (Detection and Diagnosis)** – discovery, development and evaluation of diagnostic, prognostic and predictive markers and technologies
- **Development of Treatments and Therapeutic Interventions (Treatment Development)** – discovery and development of therapeutic interventions and testing in model systems and preclinical settings
- **Evaluation of Treatments and Therapeutic Interventions (Treatment Evaluation)** – testing and evaluation of therapeutic interventions in clinical, community or applied settings

- **Management of Diseases and Conditions (Disease Management)** – research into individual care needs and management of diseases, conditions or ill health
- **Health and Social Care Services Research (Health Services)** – research into the provision of health and social care services, health policy and research methodology

Each of these main categories is further subdivided, to give a total of 48 Research Activity sub-codes. The main eight Research Activity codes can be used for a ‘top level’ analysis, a more detailed examination can be carried out by analysing the sub-codes of each main category, and cross-cutting analyses can be performed by combining sub-codes from across different categories.

The **HRCS Health Categories** are based on the International Classification of Diseases (ICD) codes<sup>57</sup> and contain 21 separate groupings which encompass all diseases, conditions and areas of health. Where possible these Health Categories have been designed to match the ICD codes. However, as the ICD codes only describe diseases and ill health, they are not always adaptable to capture the breadth of research funded by the participating organisations. The key differences between ICD codes and HRCS Health Categories are as follows:

- there is no appropriate ICD code to accurately classify studies of normal development and function of the immune system. Therefore, the separate category of Inflammatory and *Immune System* was created
- some categories have been created in areas of specific interest to the UKCRC Partners. For instance, the Stroke Research Network, part of the UK Clinical Research Network, required a separate *Stroke HRCS Health Category*
- a further difference from the ICD codes is the Infection category, which includes all diseases caused by infectious agents regardless of the type of infection or system affected
- additionally, a *Generic Health Relevance* category has been added to the system to classify research that is applicable to all diseases and conditions or general health and well-being

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57 International Classification of Diseases (ICD) <http://www.who.int/classifications/icd/en/>

## Understanding the results of the analysis

The analysis is designed to show trends in the research activities of the largest public, government and charity research organisations in the UK since 2004. There are several factors that should be considered when reviewing the results of this analysis. Firstly, analysis of the database can provide valuable information on the relative amounts of directly funded research activity in different areas, but it has not been designed to analyse all spending on biomedical and health research in the UK. Secondly, a research award may have a number of objectives; the Health Research Classification System is designed to capture the central aim of the research taking place rather than every facet or possible outcome of the work. The analysis described here provides an indicator of the ‘centre of gravity’ of the research awards held on the database.

All participating organisations fund research in differing ways. Most use a peer review system to ensure the quality of the research they fund. Some funders commission evaluations or other types of research to answer specific questions. Others focus on the support of dedicated institutes or centres for research priority areas. More typically however, research grants are awarded via ‘response mode’ – where researchers apply for funding in open competitive calls - to fund the highest quality proposals submitted to them by the research community. Considering this, there are several factors that might influence the amount of activity in any given area of health-related research.

These include:

- the scientific opportunity in an area
- the size and quality of the research workforce in each area
- the ‘researchability’ or tractability of an area
- the burden of disease in an area
- the level of charity fundraising conducted in an area

This analysis is primarily focussed on the combined research portfolios of the participating organisations and the distribution of HRCS Health Categories and Research Activities to assess the national health research landscape. It is possible to carry out a more detailed breakdown of the research using our own Research Activity sub-codes (or bespoke text mining approaches across the dataset), but given the extensive potential for this approach, these analyses are outside the scope of this report. However, [we actively support and encourage others to make use of this dataset, and those from previous analyses, for exactly this purpose.

Finally, as the fifth in a continuing series this analysis seeks to identify and assess potential trends in funding over the 18 years reporting period. However, it is important to note that any shift in the coding approach between funders or reports could influence the potential trends observed.

## Automated coding

Of particular note, in terms of coding approach and methodology changes, is the shift towards automated coding which began with the 2018 analysis. The HRCS classification model developed by Digital Science uses machine learning algorithms created using the data available in the against our own *UK Health Research Analysis 2014* dataset to refine the scoring process before its release onto *Dimensions*<sup>58</sup> in 2017. This machine learning approach was subsequently revised following the release of our UKHRA 2018 dataset in January 2020, with a release onto *Dimensions* in 2021.

In both this and the 2018 analysis, roughly half of the awards submitted were coded using the *Dimensions* platform from Digital Science. We have also seen increased interest in the use of classifications as a mechanism for defining 'health relevance' for submissions. As the resource to maintain manual coding diminishes and as evaluation and analysis work increasingly relies on automated methodologies, we expect this trend to continue.

We should note that we have shown that on a national, aggregated level the automated coding appears broadly comparable to manual coding (see our 2018 analysis - Appendix 10). However, a more detailed assessment of specific coding comparisons may require a more considered methodology to adjust for variations between a manual and an automated HRCS coding approach.

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58 Digital Science. (2018-) Dimensions [Software] available from <https://app.dimensions.ai>. Last accessed on 27-06-2023, under licence agreement.



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